The Commercial Car Journal

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—1922—
Will be a Good Truck Year!

However, the Manufacturer or Dealer Who Desires to Obtain His Share of the Business, Must Discard Sales Methods and Policies Characteristic of the Past. Closer Co-operation Between Manufacturer and Dealer

More Universal Effort Toward the Elimination of Unprofitable Trade-ins, and Greater Attention to Service, Will Place Industry on a Sound Basis

IF there is one thing that is on the mind of most every dealer manufacturer these days, it is the thought of what the year 1922 will produce in the way of truck sales. Being on the threshold of a new year, the industry is looking forward to the future with much concern, especially because of the fact that the past eighteen months have been fraught with much antipathy. The struggle through which the industry passed is not to be rehearsed at this time, but rather we shall attempt to outline in this and other articles in this issue, ways and means by which the dealer and manufacturer can increase his sales during 1922.

And right from the start we wish to advise the dealer, the manufacturer, the sales manager, the service manager or whoever he may be, that only by hard work will 1922 business be obtained. Hard work, enthusiasm and a smile **will** bring home the bacon.

Why is it that so many dealers have been down in the mouth during the past eighteen months? Why is that so many still have a dark brown taste left? Simply because they are not sold themselves sufficiently on the utility of the motor truck, to make it possible for them to sell others, and because they have failed to sell the motor truck as it should be sold.

Where Can I Sell Trucks?

We can hear the dealer expostulate: "Well, that's not going to help me sell motor trucks. What I want to know is where I can sell trucks. I don't want to hear all about what I shouldn't do and should do and all that sort of stuff. Say, if I had the names of any concerns that need trucks, I'd sell them my truck or bust." But here is just where the trouble begins. By good fortune such a dealer may **get rid** of a number of trucks —and presumably he's doing a fair business. At the end of the year, however, or when the bank asks him for a little change, he finds that he has gotten rid of the trucks and is "busted" at the same time. Which unfortunately is the situation which confronted many dealers during the past year and some are still due for it.

Will the Dealer Listen to Reason?

It is for the benefit of such dealers that we are continuously publishing articles in which are outlined and discussed the reasons why the dealer should carefully lay out a sales campaign; why he should sell motor trucks right; why he should discontinue wild trade-ins, and so on. There are many dealers **who have learned by experience** that they can only sell trucks in the right way and realize a profit. And those who sell at a profit are the ones who are going to stay in business and eventually they will form the bulwark of the industry, which no future business depression will weaken.

It does not require much of an analysis to determine the reasons for the many failures among dealers, and for the large number of changes of dealerships. It is likewise unbelievable that with all the advice that is constantly directed at the dealer, that he should remain indifferent to the policies advocated and that the only thing which sometimes brings him to his senses, is bankruptcy.

It is true nevertheless that there are many dealers in the truck business today who have either forgotten, or never knew, the fundamental and basic factors which are necessary to achieve the results which every business man desires, namely: a profit and an established going concern. Business must be conducted on a cost plus overhead plus profit basis. The reason why so many dealers have not and cannot ever hope to accomplish this, is that they "got into the game"—as many still consider it—assuming that selling trucks is the kind of business in which any second class business man can make a fine killing within a short time. Many mistakes have been made by the dealers in this industry. Many are directly the result of carelessness or indifference on the part of the manufacturer, many are the result of the dealer's own making. And for the sake of completing the evidence we shall also attribute a considerable share of the difficulties under which the trade has been laboring to the abnormal war conditions.

In consideration of all that, **isn't it about time** that those remaining take cognizance **of the mistakes of those who failed and profit thereby?**

Must Consider Fundamentals

To outline a plan of action which will prove a panacea for every individual dealer's ills, is beyond the possibilities of any human individual or any group of individuals. Neither will any suggestions offered be of any use to the dealer, unless he adopts them. For instance, we have consistently advised the industry that the trade-in evil will eventually react to the detriment of the dealer, and records of dealers now out of business show that 80 per cent of those dealers sacrificed their profits in trade-ins and consequently fell down on service. Furthermore, records show that the dealer who has given his service department proper attention, has had less to worry about than the dealer who practically neglected this branch of his business during the "soft-time" period.

One of the suggestions which we will again make, and which incidentally blankets all the other suggestions that

possibly may be made for the benefit of the dealer, or the manufacturer, is that the industry must "work intelligently." Each individual dealer must do these things which will help him obtain more sales—and when the sale has been made—more consideration than ever must be given to the customer.

There are three fundamentals which must be carefully studied and analyzed by every dealer, as follows:

1st. The market possibilities for his product in his territory.

2nd. The money he can spend in cultivating that territory.

3rd. The service he can assure his customers.

Some of our readers may wonder why we didn't mention Service first. It seems that everybody in the trade is talking about service; that service is the thing which is going to help the dealer overcome his present difficulties; that service is the cure-all for the dealer, even though he has been in the habit of making extra large allowances in trade-ins. Such, however, is not the case. No dealer can expect his service department to recoupe some of the profits lost in the foregoing manner. Service must be given first consideration after sales.

So much has been said and written about service that some dealers have gotten into the way of thinking that if they bolster up their service department at this time, business ought to come back to them automatically. But it will NOT.

The dealer who has an efficient service department can unquestionably present a better sales argument than the dealer who has not any means at hand for rendering service. But unless sales are properly consummated, the service department alone cannot be depended upon to bring in new business.

The service department will, however, keep the newly made customer satisfied and make him a repeater, provided the service department functions properly. Sales and service are so closely interwoven in the dealer's business fabric, that neither can be dispensed with, nor can one part be slighted at the expense of the other.

If there is one thing that the dealer must learn and learn quickly, it is to stop making big allowances on trade-ins. To make a legitimate profit on the sale of a new vehicle, the dealer must get the full price, not on an occasional sale, but on **every truck he sells.** The sooner some dealers wake up to this, the sooner **they will be making money.**

Industry's Crying Need

So much has been said regarding the trade-in evil that one would imagine that most dealers by this time have seen the wisdom of discontinuing the policy of sacrificing their profits, by making allowances on trade-ins on which they can never expect to realize any profit. From recent observations, however, the trade-in evil has only abated slightly. The need for appraisal bureaus is greater than ever. If dealers in our larger cities would organize and tackle this problem immediately, within a short period the trade-in evil would be eliminated. In a very few cases, the appraisal bureau plan is functioning satisfactorily, but in most instances it has fallen flat, because some of the very ones who fathered the plan were the first to break the rules. There is no time like the present to put such a plan into operation. It will be the only means of discouraging the "shopper" type of prospect, and at the same time give the dealer some profits which he can apply to good advantage towards building up his service department.

"Don't Let Them Accumulate"

In view of the fact that about 75 per cent of the trucks are sold today to old customers, the temptation to make big allowances because of keen competition is greater now than it would be if the demand for trucks were greater. For that reason the dealer can be excused in some instances, but such tactics on the part of the manufacturer are inexcusable.

A Typical Trade-in Deal

At the time of this writing, a number of letters reached us from prominent manufacturers who decry the practice of the wild trade-in. One letter goes into detail as to how two prominent manufacturers made allowances which brought the price to the consumer BELOW THE PRICE at which they would sell the dealer and actually below their own production costs. The truck that was traded-in was nine years old. It's final act was to let go of a connecting rod which smashed up the engine. The manufacturer who built this truck offered $250 allowance on the price of one of their latest models.

This manufacturer states that the truck is not worth over $100 and the owner himself says he would not give $50 for it. Still the two competitors offered this customer their machines at $2000, which price included a body which is worth $375. The interesting part of this transaction is that the list prices of these competitive models for the chassis only is about $3100. No manufacturers can hope to gain the confidence of the buyer by such dealings. Something surely rotten in Denmark. Either they are forced to clean out a lot of war stock or their list prices mean nothing. And the instance is not a remote one—it is going on continuously throughout all sections of the country.

What are such deals accomplishing? Are they helping to establish confidence? Are not these deals inconsistent with the list prices which these manufacturers have placed on their products?

Some time ago when price reductions were forced upon the passenger car industry, this publication advised the motor truck manufacturers that they should immediately reduce prices to the minimum. A storm of protest arose. The majority of the manufacturers claimed that they could not think of reducing prices because the motor truck was never boosted to the high levels, which accompanied the passenger car or other commodities, during the war boom. In some cases the manufacturers may have been justified, but the result was that gradually most every manufacturer did reduce his prices. But, instead of getting down to rock bottom immediately, they nicked off a little at a time, with the result that the buyer was at a loss to know how much he was going to gain by waiting a few days longer or a few weeks, yes, perhaps a year or so.

Of what earthly use are list prices when the manufacturer knocks off one-third from the list price by allowing the difference on the trade-in?

A few manufacturers have taken the

bull by the horn long ago and reduced their prices to the limit. These manufacturers are now doing a substantial business and have a clear course before them, and they are sticking to their list prices. The industry needs more of such concerns.

The point to be observed on the price issue is this: The longer the manufacturer delays in reducing his prices to the minimum, so much longer will the average truck owner procrastinate. There are many trucks on the streets today that should be replaced with new ones, but they will be kept in service by most owners until they know that the price reduction period has ended.

Instead of educating the truck owner to expect a reduction in price every few months, wouldn't it benefit the industry if truck owners knew that prices are as low as can ever be expected and that prices are more liable to rise than decline?

Meet Competition With Sales Methods

Let's carry this a little further. Suppose that the manufacturer who is building a reputable product at a price which permits of a fair profit, finds that a competitive make is offered at a slightly reduced price, should that offer any excuse for a price war between these manufacturers? If the first manufacturer has a produce which he knows is worth every cent of the money, should he sacrifice the quality which he originally built into the truck, simply to meet a price? If his price is the result of guesswork, then he must of necessity meet the competitor's price, but if he is offering a vehicle at a price which he can prove is equitable for the value offered, plus a fair profit, then he cannot afford to reduce his prices unless he intends to sacrifice the quality of his product.

There is only one way by which such a manufacturer can meet this competition, and that is to build a greater market for his product. With quantity production he can necessarily buy raw material and units cheaper, and he can displace laborious and time consuming hand work with up-to-date production methods. To obtain a larger market he must obtain more individual avenues of outlet for his product; he must develop a real dealer organization. Without a live, enthusiastic dealer organization, coupled with real service facilities, no manufacturer can hope to become an important figure in the truck industry. The motor truck is not a commodity which can be considered under the class of such commodities which need frequent replacement. It's a highly developed proposition which must be sold correctly. It must fit in right wherever it is sold. Its individual application must be studied, so that it will save or make money for its owner. It must not prove a liability. One truck sold right is worth all the profits of nine sold incorrectly. The dealer should always keep in mind that the satisfied customer is his best asset.

The market for the truck manufacturer this year lies right here in these old United States. Recently exporting of motor trucks has shown an increase, but the average manufacturer is not advised to build any hopes for a big export trade. Rather, he should concentrate his efforts in first cultivating his domestic market.

Must Know His Product

One of the things which the truck manufacturer should do is to carefully study his own product. This seems like an unnecessary thing to suggest to a truck manufacturer, but it is not at all uncommon for truck manufacturers to know only about half of what they should know about the product they are trying to sell to someone else. How they can expect their dealers to sell under such circumstances is beyond our imagination. The unfortunate part is that the dealer is only about half sold on the manufacturer and his product, with the result that the dealer hasn't the confidence and enthusiasm about the truck business he should have. He may be a passenger car dealer. He takes on a line of trucks. After a short time he finds it's a hard job to sell trucks and that passenger cars are easier to sell. So he concentrates on passenger cars—he'll let someone else worry about the trucks.

This does not indicate that the passenger car dealer is not the proper representative for a truck manufacturer, but simply that the manufacturer did not thoroughly sell the passenger car dealer on the truck field. In too many instances the dealer has been sold on the fact that the "Johnny Jones" truck is a world beater; that the agency for that truck will be a gold mine and that the trucks will sell like "hot dogs."

After Mr. Dealer gets the agency he realizes that service hasn't been given much thought by the manufacturer; that the latter doesn't even insist upon the dealer handling any stock of parts. He is informed that service will eventually take care of itself or that the "Johnny Jones" won't need service for a year at least, and in the meantime the dealer can order parts and install a service department at his leisure. Naturally under such circumstances the dealer starts out under a great handicap. Not only that, but he is educated, from the beginning, to the fact that service is not an essential. From the very start of his career as a truck dealer he tries to get by without rendering service. How then can he hope to compete with **well established companies** who have made service their greatest sales asset?

Again we repeat that service cannot be rendered by the average dealer unless he sells his trucks at a profit. Cut-prices; long-term paper; wild trade-ins; forced sales, etc., are not conducive to profit, and no service department can be expected to carry the loss made by sales department.

Making truck sales in 1922 resolves itself into how intelligently the dealer and manufacturer is going to push his product. It isn't a question how large a prospect list the dealer has or how large his territory happens to be or how many truck salesmen he has, but **how he makes use of the tools with which he works.**

Up to the Manufacturer

Take, for instance, the prospect list. A prospect list cannot be compiled in a fortnight. And just because a dealer has a lot of names on his prospect list does not indicate that a certain per cent of the concerns or individuals on that list are to be considered as sure buyers of his truck this year. There may be a dozen dealers in the same city that have the same names. Many dealers imagine that prospect lists are simply a compilation of names taken at random from the telephone directory. Only recently we received a letter from a dealer in the South who stated that he had taken on the agency for the ——— truck, and requested this publication to furnish him with a "list of prospects for the state of Tennessee." Is it any wonder that so many dealers are making a fizzle out of their attempts to sell motor trucks? But in such instances the manufacturer is as much at fault as the dealer. He shouldn't have allotted the agency without first knowing **in detail how this dealer was going to handle his product.**

Just a word about the prospect list. The average card on the prospect list contains insufficient information. Filing a car on the prospect list with the information "will probably be interested next spring" or "has enough trucks at present," and similar quotations is pure "bunk." The prospect card should contain all the information possible regarding the prospect's transportation requirements, the reasons why he is not interested at present and such information which will give the salesman an opportunity to go back later with a fund of information which will give him something tangible to talk about. Selling transportation and not specifications will sell trucks in the future.

More dealers and less territory per individual must be the watchword of the manufacturers who expect to sell more trucks in 1922. Unless the dealer has exceptional financial resources, he will get better results by limiting himself to a small territory, and intensely cultivating it, than by attempting to cover a large territory with an undersized sales force.

What the manufacturer must necessarily do to sell trucks this year and the years to come is to surround himself with an enthusiastic dealer organization. A good, live dealer organization cannot be obtained with a lot of promises. It means that time and money must be spent; but the results will be worth it.

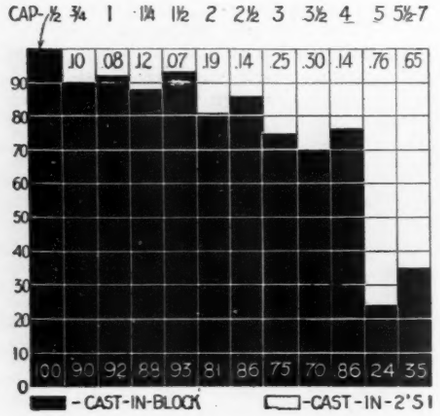
Furthermore the manufacturer must continuously keep his dealers sold on his product. The manufacturer must be fair with his dealers. He must give credit where credit is due. If the dealer has been allotted a certain territory, he must be given the benefit for all the business that he develops in that territory. Printed contracts must give way to good will and a determination on the part of both manufacturer and dealer to work in closer harmony with each other. There must be square dealing on both sides.

The foregoing resume takes into consideration some of the fundamentals which must be observed by the manufacturer or the dealer who is preparing to get his share of the business, as well as a profit, during 1922. This year will be a good truck year for the dealer who makes up his mind that he is going to sell trucks as they should be sold.

What an Analysis of Motor Truck Models *Reveals*

Analyzation of Latest Specifications Taken From December, 1921, Issue of the C C J Shows Marked Tendency Toward Greater Standardization in All Capacities. One and a Half Ton Model Still Most Popular. Four Cylinder, Cast-in-Block, and Detachable Head Engine Almost Universal Practice. Electric Lighting and Starting Equipment Shows Gain

ALTHOUGH the actual count of the truck models listed in the December issue of the COMMERCIAL CAR JOURNAL shows a total of 670 models, for the purpose of the analysis contained in the following, only 629 models were actually used in making up the tabulations and charts accompanying this analysis. The reason for eliminating some of the models is because they are practically a duplication except for the difference of wheelbase, optional wheel

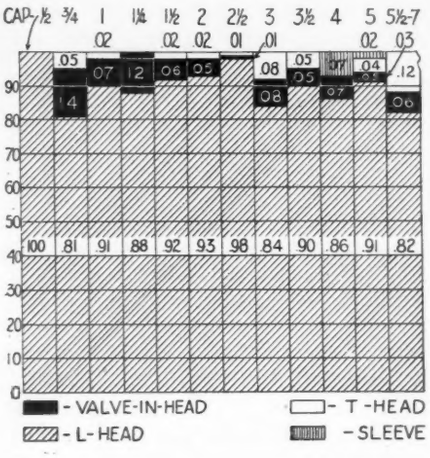


equipment or other minor details which have no direct bearing upon an analysis of this nature and which would otherwise change the results but not indicate the correct trend by models.

Not a Production Analysis

Furthermore, this analysis does not take into consideration production figures but, as previously stated, only shows the trend by models. Because of the unusual circumstances surrounding the production of many manufacturers during the past year, concerns which have enjoyed a big production during 1920 have, on the other hand, fallen way below their estimated schedule for 1921, and some concerns which have had a low production during 1920 have shown as much as a 50 per cent increase in production over 1920.

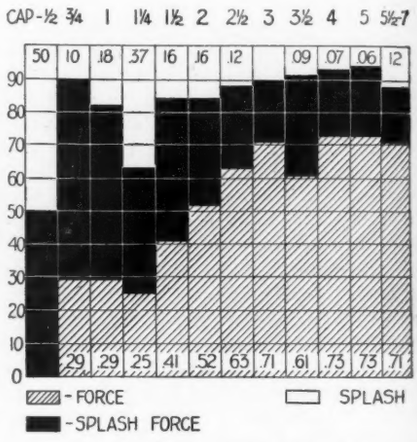
Therefore, any analysis by production at this time would not indicate the true trend, because of the subnormal conditions which existed during 1921. The reader should also consider the fact that the analysis by models is only an indication at best of the actual tendency in each respective size. For instance, in the smaller-sized vehicles the spiral bevel and plain bevel predominates while in the larger sizes the worm has the lead. Furthermore, the worm axle predominates when all models are considered, but actual production figures would disclose a different result, because production in the past year has materially increased in the smaller sizes where the internal gear, spiral



bevel and plain bevel predominate. The fact that this analysis is based on models should be borne in mind when interpreting the accompanying tables and charts.

Increased Standardization Noted

The most significant revelation is a marked tendency toward standardization both in the design of the units and general uniformity in disposition of these units. As may be observed from the accompanying charts the lower capacities



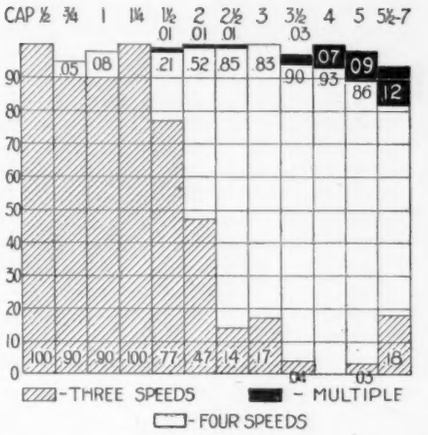
have units and constructional characteristics distinctly different from those employed in the larger capacities. In fact, starting with the ½-ton class and tracing down to the 7½-ton class, each of the intervening classifications reveals some feature differing from the class preceding or succeeding it. Progress toward more perfect design in the construction of commercial cars and greater adaptation to special tonnage requirements, is evidenced by this tendency.

MODELS	½	¾	1	1¼	1½	2	2½	3	3½	4	5	5½-7
Average Price	$943	$1560	$1697	$1900	$2389	$2851	$3266	$3705	$4132	$4358	$4793	$5786
Bore	3.55	3.60	3.64	3.77	3.79	3.98	4.03	4.20	4.44	4.44	4.67	4.86
Stroke	4.6	4.96	5.09	5.04	5.14	5.24	5.44	5.49	5.77	5.82	6.02	6.14
N. A. C. C. Hp. Rating	18.1	20.7	21.0	22.8	23.1	25.2	27.8	29.4	31.7	31.6	34.9	38.0
Gear Red. in High	4.96	5.92	6.73	6.14	7.72	8.17	8.46	8.73	9.62	9.86	10.90	11.71
Gear Red. in Low	16.93	21.06	23.32	22.34	29.79	34.69	38.88	39.27	48.82	48.13	56.46	53.97
Chassis Weight	2039	2734	3074	3163	3910	4610	5157	5657	7069	7468	8723	9378
Wheelbase	112	126	129	131	139	155	162	154	165	165	170	164

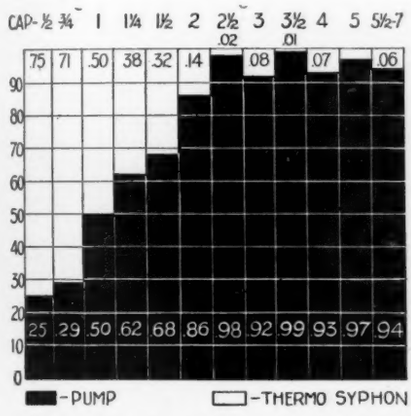
Interesting Averages by Models

The value of the accompanying tables and charts lies in the correct interpretation of the information contained in them. Unfamiliarity with conditions affecting design and construction, failure to take into calculation the great difference in the total number of models in the twelve classes, and other considerations determining the accuracy of percentages and averages in a given table will result in erroneous and misleading conclusions. Hence, to guide the reader, erratic curve, chart or table data will be explained in commenting on the various features of this analysis.

Truck models, as listed in the CCJ Specification Table, are divided into thirteen general classes, according to tonnage capacities. The last class represents those of 7½-ton or more, and as this class necessarily lacks uniformity in tonnage it was eliminated from all computations. Obviously, percentages or averages based on this class would be valueless. The total number of models in each class from which the percentages and averages were computed are as follows:



Capacities	½	¾	1	1¼	1½	2	2½	3	3½	4	5	5½-7	Total
Number of Models....	4	21	61	8	127	83	108	24	92	15	69	17	629



Apparently the 1½-ton truck of 1922 still is the most popular model, which is but a perpetuation of leadership held by this class ever since the commercial car industry achieved prominence. In fact, per cent of the total number of models offered today are of the 1½-ton capacity. The 2½-ton runs a close second, with 17 per cent, and the 3½-ton, third, with 14½ per cent. It will be noted from the above table that six classes predominate. It is, therefore, safe to assume that these classes cover all hauling requirements more effectually than any other combination of six classes. Most manufacturers have learned through experience what particular classes to include in their line.

No Marked Change in Engine Design

As engine design has reached a high degree of standardization no marked change from former practice is noted.

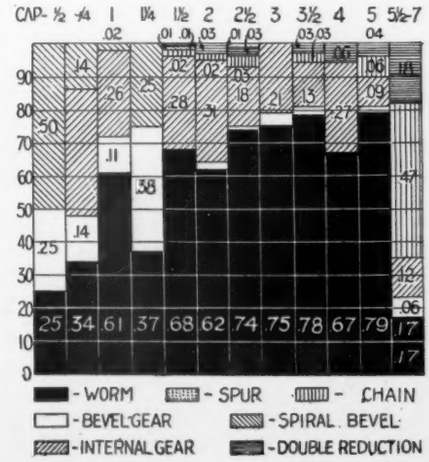
Four-cylinder engines dominate with an indisputable percentage of 99 per cent. Although six-cylinder engines have come into greater prominence as a result of 1921 Speed-Truck development, their increase in number has been insufficient to affect the percentage of four-cylinder engines in use. A per cent of over 77, which is in line with the gradual succession of increases of former years, seems to indicate that engines of the block-cast type are being accepted more and more as the most popular practice. Adherents to the two-cast cylinder engines list as many as 22 per cent of this type. Reasons for the constant increase in the cast-in-block type may be found in that this type lends to greater ease in manufacturing processes and that greater engine rigidity is attained. The detachable head type of engine is still gaining with a total of 80 per cent. As almost 15 per cent of the models listed failed to specify the type of head used, it is safe to assume that detachable head engines run well over 90 per cent. Experience has taught that because of the unusual accessibility afforded, the ease with which carbon can be removed and valves reground, the detachable head engine is the most logical design.

Arrangement of valves shows no appreciable change over former years, or radical departure in any one class. The L-head type maintains an almost even superiority of 92 per cent throughout the twelve classes, giving away here and there for another type in one class and making it up in another. (Note chart.) Of the other types .031 are T-head; .046, valve-in-head; and .003, sleeve.

Lubrication Mostly Force-Splash

The chart showing the different methods of lubrication employed disclose some very interesting information as to the systems found most practical in the various capacities.

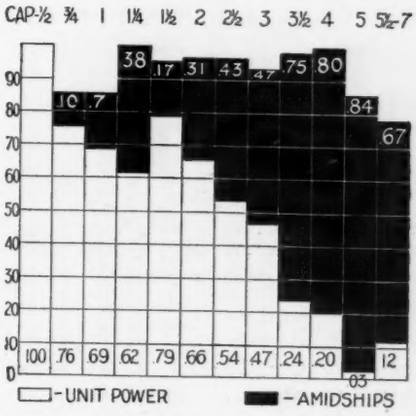
In most instances there is a preponderance of one system over all others in any one class. A general engineering concensus of the types of lubrication systems most applicable to a certain class is indicated by this chart. For example the splash and force-splash systems which predominate in the lower capacity trucks give way to the force system in the heavier models. All told, however, the force system leads with over 53 per cent. Force-splash is second with over 33 per cent, and splash, third, with over 12 per cent.



Pump Circulation Predominates

The pump predominates in the engine cooling systems with 82 per cent, displacing the thermo-syphon system, which has dropped to 17 per cent. The popularity of the former type of cooling is due to the fact that it is more positive under heavy-duty requirements as it creates a higher water velocity, thereby eliminating the need for a large radiator and less water in the system.

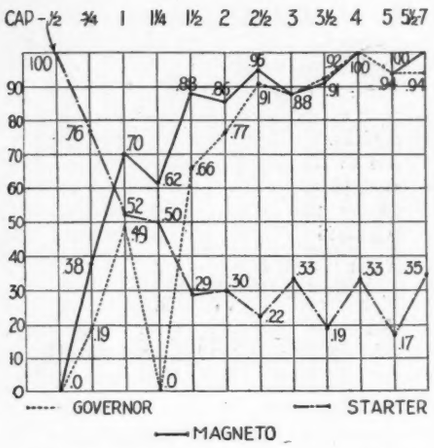
Magneto ignition holds supremacy as the most popular type in all models, although battery ignition holds quite a prominent place in the lower capacity models. Magneto ignition is used on over 86 per cent of 1921 models, battery on 7 per cent, and optional equipment on approximately 4 per cent.



An interesting feature of the fuel feed chart is the growing popularity of the vacuum system, which has for the last few years reduced the gravity type until today this last-named type is used on only 56 per cent of all models. The vacuum system is employed on 38 per cent of all models produced. Pressure type of feed has diminished to the point where it makes practically no impression against the other two types. Gravity feed will doubtlessly continue to hold its own as long as space for a gravity tank is available.

Disk Clutch Type Most Popular

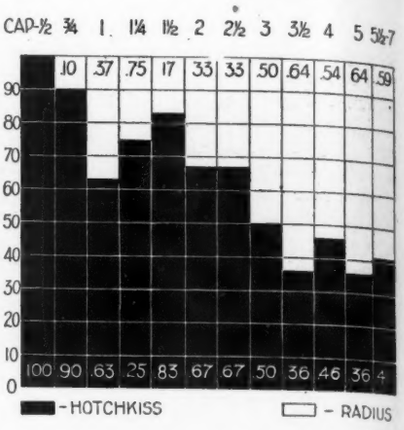
A discussion of clutches necessarily centers around the disk type as the chart indicates. The cone clutch has been gradually superceded by the disk until today the cone clutch is only represented by 4 per cent. The employment of the disk clutch exceeds 92 per cent. This percentage includes both the disk and plate types of which 77 per cent are dry.



Of the two types of transmission mountings, amidships and in unit with power plant, the latter has the jump on the former in popularity by a small percentage. This almost evenly balanced use of both types is probably due to the fact that both have their advantages and disadvantages. Because of its location the amidships type affords greater accessibility, while the unit assembly not only reduces the number of parts required, but makes for rigidity. There appears to be but little choice between the two. As the chart indicates, 44 per cent are mounted amidships and 51 per cent in unit with the engine. The amidship predominates on the heavier models.

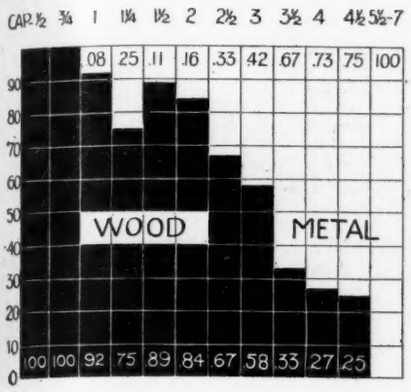
Worm gear final drive is still well to the fore with a per cent of 67. Although the internal gear type accounts for itself with only 21 per cent, an entirely different impression unfolds itself for this type in the lower capacity models where high percentages indicate its popularity. The chain type of drive holds first place with 47 per cent in the 5½ to 7-ton class. Double reduction also presents a favorable showing in this class.

It is interesting to note that over 56 per cent of all models listed now have four-speed transmissions. This tendency, which had its inception on a big scale during the war period, increases in popularity with the increase of model capacity. Evidently four-speed gear sets have demonstrated and proved added utility over the three-speed type. This tendency is especially true in heavy-duty service, where the heavier models demand greater flexibility in operation. Multiple speed transmissions (multiple applies to any



Tables Showing Classified and Total

MODELS	½	¾	1	1¼	1½	2	2½	3	3½	4	5	5½-7	Total Number	Total Per Cent
NUMBER	4	21	61	8	127	83	108	24	92	15	69	17	629	100
ENGINE														
L-Head	100	81	91	88	92	93	98	84	90	86	91	82	578	92.
T-Head	.....	5	2	.....	2	2	1	8	5	7	4	12	20	3.1
Valve-in-head	.....	14	7	12	6	5	1	8	5	.....	3	6	29	4.6
Sleeve	.....	.....	.....	.....	.....	.....	.....	.....	.....	7	2	.....	2	.3
2-Cylinder	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.1
4-Cylinder	100	100	98	100	100	98	100	96	100	100	100	100	625	99.4
6-Cylinder	.....	.....	2	.....	.....	1	.....	4	.....	.....	.....	.....	3	.5
Cast in 2's	.....	10	8	12	7	19	14	25	30	14	76	65	140	22.2
Cast in 4's	100	90	92	88	93	81	86	75	70	86	24	35	489	77.8
Detachable	25	62	80	63	83	80	90	85	82	80	78	83	500	79.4
Unknown	50	33	18	25	16	15	10	15	18	20	22	17	92	14.6
LUBRICATION														
Splash	50	10	18	62	16	16	12	.....	9	7	6	12	80	12.7
Splash-Force	50	61	53	13	43	32	25	29	30	20	21	17	212	33.7
Force	.....	29	29	25	41	52	63	71	61	73	73	71	337	53.6
COOLING														
Pump	25	29	50	62	68	86	98	92	99	93	97	94	517	82.2
Thermo-Syphon	75	71	50	38	32	14	2	8	1	7	3	6	112	17.8
IGNITION														
Magneto	.....	38	70	62	88	86	95	88	91	100	94	100	546	86.8
Battery	75	38	16	25	9	7	2	8	1	.....	1	.....	46	7.3
Optional	.....	19	8	13	.....	.....	1	.....	3	.....	1	.....	14	2.2
Unknown	25	5	6	.....	3	7	2	4	5	.....	4	.....	23	3.7
FUEL FEED														
Gravity	25	48	49	50	56	61	59	50	62	60	51	76	355	56.4
Pressure	.....	.....	.....	.....	1	2	1	4	1	7	4	.....	10	1.6
Vacuum	75	47	41	50	39	32	37	42	35	33	43	24	240	38.2
Unknown	.....	5	10	.....	4	5	3	4	2	.....	2	.....	24	3.8
RADIATOR														
Cellular	25	33	21	18	18	18	16	13	10	14	7	12	97	15.4
Tubular	50	43	46	50	50	46	45	45	38	33	30	53	275	43.7
Fin Tube	25	24	33	50	32	36	39	42	52	53	63	35	257	40.9
GOVERNORS	.....	19	49	.....	66	77	91	88	92	100	94	94	482	76.6
CLUTCH														
Disk	75	95	98	88	96	96	96	91	97	93	96	88	600	95.4
Dry Disk	50	66	70	88	70	70	68	58	73	80	75	53	.....	.....
Wet Disk	.....	.....	2	.....	1	2	1	.....	2	.....	4	12	.....	.....
Cone	25	5	2	12	4	4	4	9	3	7	4	12	29	4.6



gearset containing more than four gear changes) are mostly in evidence in the classes ranging from 3½ to 7 tons.

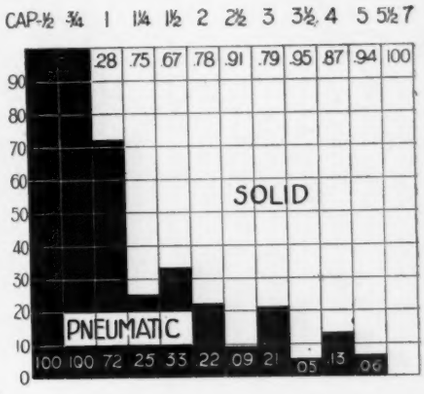
The continued trend toward pressed steel frames in preference to the structural steel frame is indicated by the almost even percentage of 72 throughout.

Hotchkiss drive shows an increase over former years showing an employment of 68 per cent today. The radius rod construction still holds prominence in the heavier models. Although fabric and combination fabric and metal universals are used to quite an extent, the metal joint holds the lead, with 87 per cent on all models. The fabric joint is, however, continuously increasing in popularity in the smaller sizes to a very marked degree.

A more universal use of governors is shown by the increasing number used on 1922 models. The larger Speed Truck production during 1921 probably accounts for the impetus given the governor in the lighter classes.

The tubular type radiator has a slight edge on the fin-tube type with 44 per cent of all models, and 41 per cent for the fin type. Cellular core type radiators, which are mostly applied to pneumatic tire equipped jobs, are used on 15 per cent of all models.

The trend of tire equipment is told completely by the chart. As will be noted, pneumatic tires have become almost



standard in models of one-ton and less, giving way precipitously to the cushion and solid tires in the heavier sizes. Wood wheels still maintain a big lead with an almost two to one ratio over metal wheels of all types. By reason of heavy-duty service requirements the wood wheel naturally gives the lead to metal wheels in the heavier classes.

Percentages of Types and Designs of Units

MODELS	½	¾	1	1¼	1½	2	2½	3	3½	4	5	5½–7	Total Number	Total Per Cent
STARTER	100	76	52	50	29	30	22	33	19	33	17	35	190	30.2
TRANSMISSION														
Three Speeds	100	90	90	100	77	47	14	17	4	.....	3	18	251	39.9
Four Speeds	.....	5	8	.....	21	52	85	83	90	93	86	64	355	56.4
Multiple	.....	.....	.....	.....	1	1	1	.....	3	7	9	12	15	2.4
Unknown	.....	5	2	.....	1	.....	.....	.....	3	.....	2	6	8	1.3
TRAN. LOCATION														
Amidships	.....	10	15	38	17	31	43	47	75	80	94	77	279	44.3
Unit with engine	100	76	69	62	79	66	54	47	24	20	3	12	320	50.9
Unknown	.....	14	16	.....	4	3	3	6	1	.....	3	11	30	4.8
UNIVERSAL JOINTS														
Metal	100	86	84	75	88	89	90	83	89	86	89	88	553	87.9
Fabric	.....	14	12	25	10	5	9	17	6	14	8	6	57	9.1
Unknown	.....	.....	4	.....	2	6	1	.....	5	.....	3	6	19	3.
FINAL DRIVE														
Bevel gear	25	14	11	38	.....	2	1	4	3	.....	2	6	21	3.3
Chain	.....	.....	.....	.....	2	2	3	.....	3	.....	6	47	22	3.5
Internal gear	.....	38	26	.....	28	31	18	21	13	27	9	12	134	21.3
Worm	25	34	61	37	68	62	74	75	78	67	79	17	425	67.6
Spur	.....	.....	.....	.....	1	.....	1	.....	.....	.....	.....	.....	2	.3
Double reduction	.....	.....	.....	.....	1	3	3	.....	3	6	4	18	17	2.7
Spiral bevel	50	14	2	25	.....	.....	.....	.....	.....	.....	.....	.....	8	1.3
REAR AXLE TYPE														
Semi-floating	.....	48	46	74	52	41	33	63	25	67	28	18	249	39.6
¾-floating	25	10	13	13	5	.....	.....	.....	.....	.....	.....	.....	18	2.8
Full floating	50	.....	7	13	4	22	43	12	56	7	57	12	174	27.7
Dead	25	42	34	.....	39	37	24	25	19	26	15	70	188	29.9
FRAME.														
Pressed Steel	100	90	84	75	84	53	70	67	74	80	68	70	455	72.
Rolled Channel	.....	10	16	25	16	47	30	33	26	20	32	30	174	28.
DRIVE														
Hotchkiss	100	90	63	75	83	67	67	50	36	46	36	41	430	68.3
Radius rod	.....	10	37	25	17	33	33	50	64	54	64	59	199	31.7
WHEELS														
Wood	100	100	92	75	89	84	67	58	33	27	25	.....	408	65.
Metal	.....	.....	8	25	11	16	33	42	67	73	75	100	221	35.
TIRES														
Pneumatic	100	100	72	25	33	22	9	21	5	13	6	.....	155	25.
Solid	.....	.....	28	75	67	78	91	79	95	87	94	100	474	75.

Who is Responsible for Lack of Good Truck Salesmen?

Here Are the Three Primary Reasons for the Lack of Them:

Lack of Proper Training. Lack of Experience. Lack of a Fair Method of Compensation

MANY changes are occurring in the motor truck industry and different problems are receiving a careful analysis and many solutions are being suggested. That of the salesmen is a real problem but it can be solved, at least so says James A. Inness, who has had an extensive experience in selling motor highway transportation and rendering service. He advances reasons why there are so many unsuccessful salesmen and suggests remedies for training them.

* * * *

"The gray hairs which adorn the heads of the factory branch manager, dealer and distributor can be accounted for easily. He gets slammed from all sides. The factory contributes its share when the G. S. M. wants to know 'why more trucks are not being sold' when business is slow, and less trucks when the factory cannot fill orders. The owner, also, has his kick. He wants to know why his truck should not be repaired free of charge even if it did knock down a few trolley poles. And when the entire works are not passed out on a platter, the owner proceeds to write the factory, principally because his power bill or coal bill has jumped a few dollars the past month. Then the men in the branch cannot understand why the poor fish (manager) doesn't make the factory ship trucks faster when boom times are on, allow bigger allowances for trade-ins, etc.—oh, well, what's the use of naming more reasons for the worried look.

Salesmen a Real Problem

"One of the biggest problems the man in charge has today, the man who is really trying his darndest to sell trucks right, is this question of salesmen; how to get them, how to train them and how to keep them on the job. Now unless the factory is working in thorough accord with you, actually and actively, your proposition is hopeless. I know, for I have been through it and so has every manager, distributor and dealer of experience. The absolute lack of any systematic plan of sales campaign, or comprehensive study of local conditions on the part of the average truck factory is beyond belief. My genial friends, the G. S. M.'s will, of course, disagree with me. They are the greatest analysts ever. They have the most beautiful array of figures, and as for quotas, oh, boy! Of course their figures are no earthly use to us fellows who have to produce, but they sure do look fine at the factory office.

"Suppose the truck is all right, the factory fine, the G. M. S. great (and by that I mean only stays in town a day or two, gives you good cigars and insists on paying all the checks) one is faced with the problem of selling and must have men. The selection of salesmen in the truck industry is peculiarly difficult because the men who sell deal with a wider range, or if you please, with a greater variety of customers than in any other line; one argument in favor of the 'Classification by Trades' against the 'Zoning System.' So the truck salesman must have versatility, he must have ability to deal with and handle different types of men. He must be a plugger and not easily discouraged, for sales do not come every day in this line and disappointments do. And he must have the gift of never losing sight of the fact that he WANTS THAT ORDER.

Turned Loose Too Often

"The story of the selling end of the truck industry is the same as the balance of its history, its growth has been so rapid there has been but little time for real analysis. Consequently the salesman has been in many cases, turned loose and allowed to shift for himself. They have been, of course, instructed as to models, principal units, prices and terms, but how many concerns really thoroughly post their men, and then after they are out on the street, really follow-up their work and keep them on the job? The answer is mighty few. For instance, I met a man the other day who had just started selling for one of the big companies. He had been with them about 30 days, and he informed me that during that time he had seen the general manager but twice, and his sales manager but three times. An exceptional case, I grant you, but at the same time there are entirely **too many salesmen on the street today who are not properly posted and properly followed-up.**

"This is, to my mind, one of the principal reasons why the auditor shakes his head sadly when he comes to charging-off bad drawing accounts at the end of the year and the sales manager explains volubly that there are no good truck salesmen. And it also explains to a certain extent, why so few men in this line make more than a bare living and that the vast majority are constantly changing their jobs. Now I will readily admit that selling trucks is hard work, a mighty hard proposition, but it isn't any harder than lots of other lines, yet the sales manager will tell you that good truck salesmen have ceased to exist.

Lack Proper Training

"There are reasons, and to my mind they are—lack of proper training, lack of experience and lack of a just and fair method of compensation. Suppose we consider these things in logical order and see if a practical plan covering these points is not feasible. Take the question of training. It would appear that the first thing a sales manager should do is to make the new man understand that the company is backing him, and that he is too. A proper pride in the firm he represents, and its product, is absolutely necessary to give the salesman authority and confidence. The knowledge that the sales manager is always ready to jump in and help on a sale is equally necessary. I do not mean by this the altogether too frequent line of 'hot air,' but just a quiet instructive talk with the salesman, which we older salesmen recognize instantly and accept at its true worth. To put it concisely, I believe the first thing for the sales manager is to sell the new man both the company and himself.

"Next, coach him carefully on it. While I believe a salesman should approach the subject of technical details with great care, if at all, yet at the same time he should be able to answer readily the line of questions asked of him by the average prospect, and in a manner that will show he knows what he is talking about. Personally I feel it is easier to sell a prospect the company and the service, than it is to go into a mass of technical details, and run the risk of a controversy with him or his mechanic over some perfectly minor point.

Get the Next Installment of the "Big Four."
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"Then the service department and stock room. If you have an inspection system, either in the shop or outside, explain it to the new salesman, also the shop system and the way the work is handled; how the stock room is operated, and if you have service parts, such as magnetos, carburetors, radiators, etc., how these units are serviced. These are mighty good talking points. But in this connection make your new salesman understand that you will not permit him, under any circumstances, **to promise more in the way of service than you are willing or able to perform.** It is a fairly common practice and a continual source of trouble, this promising that which cannot be delivered.

"This is what I term posting a salesman and is, of course, part of his training, but I believe we should go further. Teach your man to study his prospect carefully, in most cases make his conversation brief and always to the point, never losing sight of the fact that what he is there for is to GET THAT ORDER. Time and time again I have listened to men so wrapped up in telling a prospect all the wonderful things about their truck (and in most cases the prospect did not seem particularly interested in that angle) that I felt sure that the salesman had entirely lost sight of the fact that his real business was to secure the order. More than that, I have known of cases where the **salesman has actually talked himself into and out of an order without knowing it.**

"See if you cannot impress the new salesman with the importance of analyzing his prospect, to determine in his own mind whether the prospect has use for a truck and, if he has, whether he is in a position to pay for it. I know this may sound foolish, and one would think a man would do this for no other reason than to save his time, but it is amazing the number of times a salesman will report a good prospect, and then when the sales manager desires to know why the deal did not go through is told the prospect hasn't the necessary funds.

Handling the Trade-in

"In a general way the same applies to the question of trucks to be traded-in. It is not hard for a salesman to ascertain what a prospect wants for his old truck if he goes about it the right way, and if the sales manager would only train his men to do this, it would not only save the salesman a great many bitter disappointments, but save money for the house. The money spent on useless inspections runs into an appreciable sum during the year.

"Make your man understand that it is useless to trouble you with impossible deals. If a salesman has been properly posted, he knows how far he can go in the matter of price and terms, and this practice of impossible deals leaves strained relationship between the sales manager and the salesman. There is another angle to this. If your salesman will take the stand firmly that he has gone as far as he can, he still has a pretty good chance of landing the order; that is, judging from the number of times I have sent a salesman back on a proposition of this kind, and had him bring back the order at a regular price and terms.

"As to co-operation. See that the salesman is properly equipped when he starts out. That his cards look right. That his photograph book has the right pictures in it. See to it that these pictures are of locally owned trucks, carefully assorted and with different types of bodies. To my mind a dozen photographs of trucks owned locally are worth fifty of chassis, motors, transmissions, and trucks owned a thousand miles away.

"Above all see to it that his loose leaf book has all the information he is likely to require, and so arranged that he can locate the desired data instantly. Your salesman must keep his prospect's mind on the deal constantly, and he cannot do this if he has to go fumbling through a poorly arranged data book, or possibly have to 'phone the office for information that a little more thought and care on his part would have provided for him.

James A. Inness
Expert on motor highway transportation and service

"The salesman should have the system of keeping track of prospects, and the follow-up system, also the making of reports, explained very carefully and should be scrupulously protected in his prospects. In case of a dispute over a prospect, settle it instantly. This comes up continually and is a source of endless trouble. The longer an argument of this kind, or any other for that matter, is carried on, the longer the bitterness will endure. Go over a salesman's reports with him every day if possible, analyze them, settling with him as to his reminder date, and give him such suggestions as you can on pending deals. See to it that his follow-up calls are ready for him when he comes in, and if he is short of work, have a suggestion or some new names ready for him. 'Ringing door bells' is the most discouraging thing I have ever done in the truck business.

"Try and work your men in trades as far as possible. The 'Zoning System' has its advantages, but it seems to me a man who has already sold half a dozen coal dealers, for example, is better equipped to sell than a man who has not sold a coal job for a year.

"Don't keep a salesman waiting when he comes in to report, or for instructions. He is not making money for himself or the firm, hanging around the office.

"Keep your salesmen's meetings bright and interesting, and make all the men attend and take part. The first part of this suggestion is going to make the sales manager scratch his head pretty often, but these meetings do a lot of good if properly conducted.

"Be careful about a new man's calling list. It is a good plan to give him the names of a few concerns who are apt to be in the market within the new month or so, and supply these prospects for calls to be made the third or fourth day. If you do not happen to have any, put a couple of what are termed 'perpetual prospects,' the cusses who are always going to buy but never do. Your salesman has absorbed a lot of information in his course of training, and the best way to fix it in his memory is to give him an opportunity to talk it over with some one.

The Right Compensation

"As to compensation. There is nothing, apparently, approaching uniformity in the trade on this subject. A few concerns work their men on straight commission. Some, and I believe the majority, on a drawing account. Others on straight salary, salary and commission, salary and bonus, etc. This really comes down to three classes, straight commission, drawing account against commissions, and salary with or without commission or bonus. The objections to straight commission are so many and obvious that it is hardly worth discussing, and the only possible place where it can be utilized is with some of the very largest manufacturers who probably reason their product is so well known their men can start selling at once. The drawing account against commission has been, I think, the one most used, but I believe is slowly giving way to the salary and commission or bonus basis, just as other things in the trade are changing. I am sold on the last named proposition for several reasons. In the first place I believe that a man who is on salary feels that he is tied closer to his concern. A man on the commission basis feels his time is more his own than a man on the salary basis, and is a little more prone to drop in to a picture show, shoot a little Kelly or knock off earlier to play golf. Perhaps this is drawing it a bit too fine, but the tendency is there just the same.

"Second, a man is very apt to lose money on a drawing account, figuring to make up the rest on his commissions, and if sales do not follow as fast as he anticipated, he gets into a hole. No man who is worried about monetary obligations can give his best efforts to selling, and believe me, a man has got to give everything he has in him to make good in selling trucks. Third, although this applies to the manager rather than the salesman, you are not apt to carry a 'dead one' too long as frequently happens under the drawing account method where commissions run into money as they do in this business."

Review of Past Six Years Shows Increase in Battery Ignition

Battery Ignition Shows an Increase During the Last Two Years in Light Capacity Trucks; Magnetoes Practically Standard in Heavy-Duty Vehicles

This Analysis by Models Offers Interesting Food for Contemplation for All Concerned in Motor Truck Ignition

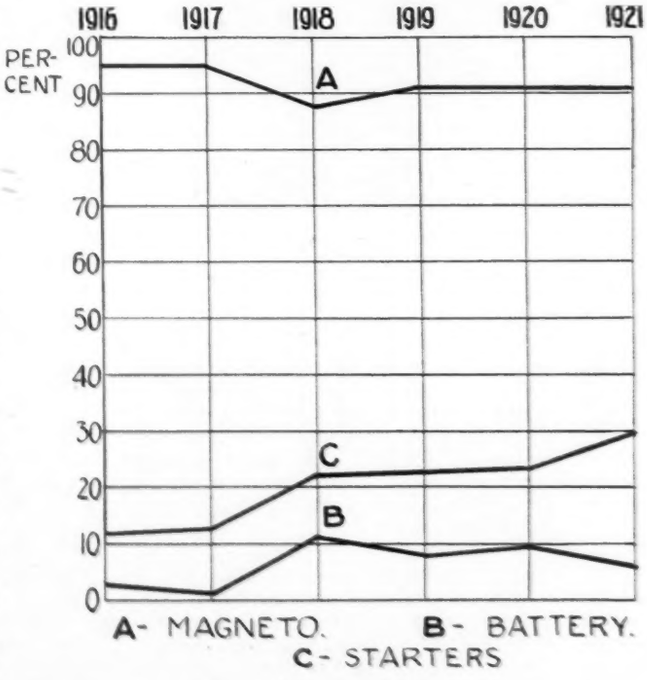
By C. P. SHATTUCK

IN reviewing the trend in ignition for the past six years, a resume based on models, shows that battery ignition has gained in advocates 3.3 per cent. The percentages for the past six years show a slight fluctuation. For example: In 1916, of the 593 models 3.5 per cent were battery equipped. The following year, with 535 models, the figures declined to 2.8 but rose in 1918 to 10.3, which rise may be explained as due to the demand for magnetos for war production. In 1919, 9.2 per cent of the 553 models were battery equipped. The following year when magneto makers were in full production, the table shows 9.5 per cent, a slight increase over the preceding year. Last year the per cent of models battery equipped was 8.8.

Is Battery Gaining or Losing?

Analyzing the magneto equipment we find that 96.5 per cent of all models in 1916 were magneto equipped and that the following year saw an increase to 97.2. In 1918 and 1919 magnetos lost ground slightly, due, it is believed, to production conditions, but in 1920 the percentage was 90.5, which figure was increased to 91.2 per cent in 1921. Carrying the analysis still further, i. e., in detail to show where either type has gained or lost, and using the years 1916 and 1921 for comparative purposes, we find that battery ignition has gained in the following models: 1500 lb., 1, 1½, 2, 3 and 3½ tons. The gain is most pronounced, and was to be expected, in the 1500 lb. class in which battery was rated at 12.7 per cent in 1916 and 45 per cent in 1921. The next greatest gain was the 1-ton. The per cent battery in 1916 was 3.7. Last year it was 25.7. The 1½-ton's gain was 7.5 per cent, as 1.2 were battery equipped in 1916 and 8.7 in 1921. The 2-ton was 100 per cent magneto in 1916 but 7.2 per cent of the models last year joined the battery division. The 2½-ton, which was 6.7 per cent battery in 1916, has dropped to 1.9 per cent, a gain of 4.8 per cent in favor of magnetos. The 3½-ton has changed but .4 per cent in the six years; that is, from 1916 as compared with 1921.

A study of the magneto percentages, particularly for the last two years, should not occasion any great worry to the manufacturers of this type of ignition, for it has lost but 4.3 per cent since 1916. However, if an analysis were to be prepared on the production of the various models produced in 1916 and 1921 it is reasonable to assume that based on the number of units used, battery and magneto, that the figures would supply the manufacturers of magnetos with interesting food for thought.



If the figures above quoted mean anything the gain of the battery ignition in the 1500 lb. and 1-ton classes, and increases in the 2 and 2½-ton models, they can be interpreted to indicate that 1922 and thereafter will see further gains for the battery advocates and gains where there is volume in production. The magneto appears firmly intrenched in the heavier capacity models, particularly where solid tires are employed, for it would appear that truck manufacturers are not as yet convinced that the storage battery is dependable or that battery service in the truck field has been developed 100 per cent efficient. Certain battery makers may take exceptions to this statement, but the figures prove the contention. Until a battery is developed that will be nearly fool proof, suspended so that it will not be affected by road shocks, etc., and truck drivers developed to a higher degree, the writer does not believe that battery ignition will make any great gains in the heavier capacity trucks.

Influence of the Starter

The gains made by battery ignition were more or less influenced by the development of pneumatics for trucks and to the increasing use of starters. As was the case in the passenger car field the use of the starter, which of course requires a storage battery, and a generator to charge the battery, has led manufacturers to adopt the battery ignition, which is considerably cheaper than the magneto. The use of starters has increased from 11.3 per cent in 1916 to 29.8 per cent in 1921. This year and next will doubtless see more starters installed but will this mean a greater use of battery ignition? The magneto makers do not believe the gain, if ary, will be large. On the other hand, advocates of battery ignition claim that each year will see steady gains for their product. Time will tell which is correct.

Manufacturers of magnetos do not fear battery competition in 1922 and thereafter, judging from the statements of those asked to express themselves as to the trend of design. Alfred H. Bartsch, general sales manager, American Bosch Magneto Corp., and who has long been prominent in the ignition field, said:

"The American Bosch Magneto Corp. is arranging as rapidly as possible to make everything electrical for the industry. We make both magneto and the timer-distributor systems, or, as the latter are commonly known, battery systems. The latter depends upon a storage battery for its current supply, while the magneto depends upon the lines of force constantly existing between the poles of permanent magnets to induce current in the armature. It is because of the comparison that I have just made that magneto ignition may be considered superior to the battery system.

"I say this because as we eliminate the factors of possible trouble or failure, we reach more nearly the maximum of dependability, and since a magneto is the only dependable self-contained unit that generates a high-tension current and delivers it to the spark plug without assistance from or in connection with a battery or coil, one may consider that a good magneto is more nearly 100 per cent dependable than any equally well built battery ignition system.

"And now as we agree that motor trucks must be as nearly 100 per cent dependable as it is possible to make them, then it seems quite logical to suppose that the most practical ignition for trucks is magneto ignition and, as a matter of fact, the ignition equipment selected by truck manufacturers bears out my contention in that the majority of them use the magneto and, as far as we ourselves can see now, there will be little, if any, falling off in the popularity of the magneto as applied to trucks. This is especially so when a truck is constructed or designed for important transportation work and for those operations where time means money and goods must be delivered.

"There is a place in the commercial car field for battery ignition, but as this type of ignition is not satisfactory for the needs of all users as yet, a fact perhaps exemplified by the rather large number of installations made upon commercial cars by our five hundred service stations. In this regard I think it will be found that service costs are lower when operating a fleet of magneto equipped trucks than it would be when operating a similar fleet with battery ignition equipment, simply because the factors requiring service in the former are fewer in number. The taxicab companies, the motor bus companies and owners of large fleets of trucks watch closely their costs; because of the importance of profits, these organizations use magnetos, perhaps for the very reasons I have mentioned."

Vibration Harmful to Battery

M. L. Grace, Kokomo Electric Co., which manufactures both types of ignition, says it is simply a question of which type the truck engineer desires insofar as the Kokomo Electric Co. is concerned. "We understand that the reason why magneto ignition is so popular among truck makers is that on the heavier type trucks there is considerable jar and vibration, principally where solid tires are used. Several engineers consider this vibration very harmful to the storage battery and for this reason use the magneto. However, on the lighter type trucks which use pneumatic tires, this objection is practically done away with and many engineers are adopting battery ignition on their light trucks."

Quality Ignition Essential

William H. Schuyler, president of the American branch of the Scintilla Societe Anonyme, Soleure, Switzerland, believes that the future buyer of a truck will be vitally interested in the costs of maintenance of all equipment and that dependability and low costs will be the yard stick with which the prospect measures the product.

"Like in any industry or business," said Mr. Schuyler, there exists in the truck industry two distinct classes, one selling on the basis of price or low initial cost and, therefore, heavy depreciation, upkeep and maintenance charges. The other class is selling on quality or higher first cost and, therefore, low upkeep and maintenance costs. Quality business is always more satisfactory, because it results in lasting satisfaction to the buyer and creates good will for the manufacturer.

"On account of changed business conditions, it is universally agreed that henceforth quality alone will keep or build up a permanent business. Those who have the vision to look ahead realize that the business man who will be in the market for motor trucks, be it one or a fleet, will be interested primarily in quality, i. e., dependable performance, endurance and low operating maintenance costs. The future buyer will also figure out how much his trucks will cost him when they cannot perform; that is, when they are in the repair shop.

"Business is surely improving, prosperity is on the horizon and also good old fashioned and healthful competition. The merchant knows that he will have to 'deliver the goods' to satisfy his customers, and this he can do only with dependable motor equipment. Investigations have shown that ignition troubles are more numerous than all other motor troubles combined. Therefore, the need for a reliable ignition system is imperative. This is being realized more and more by manufacturers who know that nothing will give the entire truck industry more stimulus and good will among buyers, that every part of a truck can be made entirely dependable and lasting, and without too much cost.

"Going back to the time when the hot tube ignition appeared, no device has proven as satisfactory as a high grade magneto, which delivers a powerful and positive spark at very low cranking speed, an important feature on truck motors. Another outstanding advantage of the high grade magneto is the fact that it furnishes absolutely dependable ignition, not over a few months, but for years. It is in this respect that the manufacturers as well as the owners are so keenly interested in magneto ignition.

"When it comes to operating costs, a high grade magneto costs practically nothing to operate and to maintain, because its source of current or life is inexhaustible. It requires no attention whatever, except occasional oiling. It does not have to be serviced continually, during which, of course, the truck is forced to be idle. It requires a negligible amount of replacing of parts. It is in this respect, therefore, that a high grade magneto saves so much time and money.
magneto is entirely free from ignition troubles and, therefore, the greatest source

"A truck equipped with a high grade of trouble is eliminated. Thus the truck owner will be able to make full use of his equipment, and his investment will prove to be a profitable one. This in turn creates good will for the manufacturer, and brings confidence to those prospects who are still doubting the advantages of trucks. For the above reasons the manufacturers who are building quality products, and wish to give their dealers all possible sales advantages, will equip their product with a high grade magneto. We feel that the use of magnetos for trucks has never been seriously challenged by any other ignition system, and, as buyers will henceforth demand endurance and dependability of every part, the use of magnetos will steadily and firmly increase. With the revival of business, the demand for trucks must necessarily increase, and, therefore, the manufacturers of high grade magnetos can expect good business."

Buyer Must be Shown

George Beals, sales manager of the Teagle Magneto Co., says: "When a man buys a truck he invests his money in something that must show returns. Whenever a truck is out of commission, regardless of the cause of the trouble the owner is losing money and it is for this reason that successful truck companies devote their energies so earnestly to the servicing of their product; that is, to keep the trucks operating. The average truck is handled by men who are paid wages and who give little thought to their machines, and if the same are not in good condition, or they abuse them and the owners do not have the necessary repairs made, the drivers leave their jobs and seek employment elsewhere. We have found, too, that the average truck driver is absolutely ignorant when it comes to making repairs. Invariably it is necessary to leave the truck where it has ceased to run and send for the service man. Therefore considerable time is lost.

"With battery ignition, should the battery develop trouble the truck is out of commission, whereas if the engine is equipped with a magneto the driver can continue his journey and hang up a lantern if necessary."

Don't Miss the February Bus Number

Is Liquidation Complete?

By C. S. PERRIE

DURING the past year or so dealers have been much concerned over the reduction in prices and in the liquidation of inventories by the manufacturers. It has been generally believed—the past tense is used—that prices have returned to, or nearly so, prewar levels. But despite the fact that many manufacturers have made one reduction after another, the average prices, based on the total number of each capacity model, show some very interesting food for thought. A study of the accompanying table giving the average price by models for the past six years, as well as the high and low marks, reflects the thought that the reductions have not been as pronounced as has been generally supposed.

Average Price Has Advanced

Analyzation by models and taking the 1000 lb. capacity first, it will be seen that the low price was $689 in 1916 and high $943 in 1921. A drop of nearly $500 was made, however, in 1921. It may be said that the factors of supply and demand were operative in the case of the 1500 lb. models, for the average price dropped from $1318 in 1916 to $1179 the following year, then rose steadily to $1560 the average price last year.

The average price of the 1-ton dropped $93 in 1917, advanced $6 the following year, increased to $1879 in 1920 and fell to $1697 last year, but this is in excess by $242 of the price in 1916. The 1¼-ton prices show a similar fluctuation, falling off $288 in 1917, increasing $571 in 1918 and dropping $163 in 1919. The average price increased $78 in 1920 but fell $58 last year, but is still $240 higher than in 1916.

Increased $579 in Six Years

The average price of the 1½-ton has increased steadily from 1916, at which time it was $1881 and in 1921 was $2389, an increase of $508. The average price of the 2-ton increased from $2272 in 1916 to $2908 in 1919, then fell off $86 and again fell in 1921, when it was $2851 or $579 greater than in 1916.

The curve of the 2½-ton shows an increase from 1916 to 1919, inclusive, when it was $322. In 1920 it fell $168 but last year advanced $212 or to $3266, which is $785 greater than in 1916.

The average price of the 3-ton increased from $2976 in 1916 to $3954 in 1919 but the following year dropped $206, and a further drop of $43 was registered in 1921.

The average price of the 4-ton dropped $26 in 1917, increased $603 in 1918, $259 in 1919, $71 in 1920, but fell $41 in 1921.

The curve of the average price of the 5-ton shows an increase up to 1920, when it was $5077 or $619 greater than in 1916. The year 1921 shows, however, a decrease of $284 but this is in excess by $635 of the 1916 price. The average price of models from 5½ to 7½ tons rose $265 in 1917 and increased steadily up to 1921, when it was $6626. The year 1921 saw a reduction of $840, but this price is greater by over $1000 than it was in 1916.

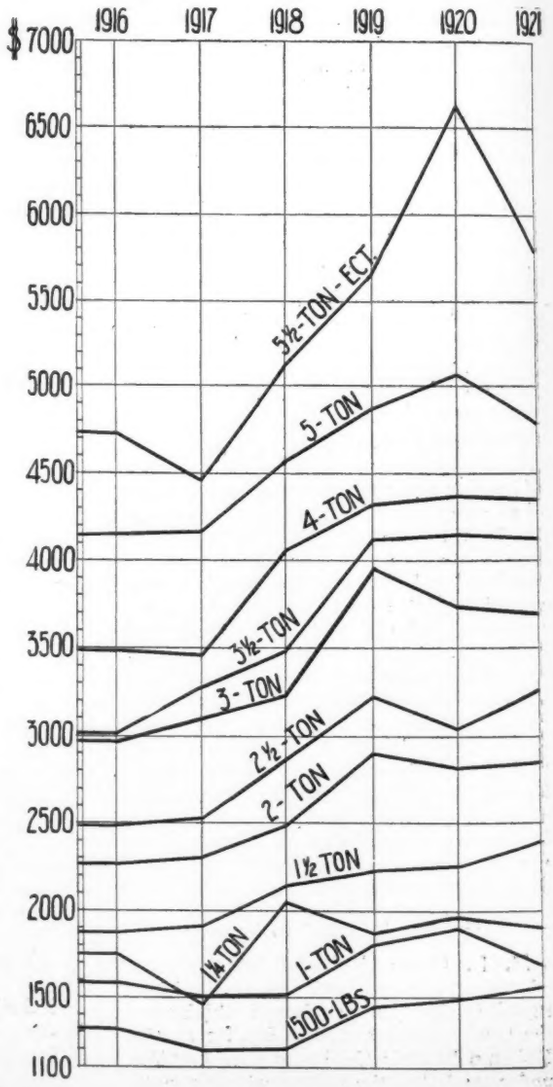
1921 Prices Were High

The figures show that the low price was reached by eight in 1916 and by four in 1917, and that five were high in 1921, five in 1920, and one each in 1918 and 1919.

Consideration must be given, however, to the various factors influencing the increase in average prices, such as the demand brought about by the war, and that induced by the boom period. But the surprising feature as revealed by the average prices is that with the five models, 1, 1¼, 3, 3½ and 4, whose average prices are lower in 1921 than in 1920, the average cut noted is but $66. The greatest reduction is that of $182 by the 1-ton, with the 1¼-ton second, with a reduction of $58. The reductions from 1920 of the 3, 3½ and 4-ton are $43, $8 and $41, respectively. The greatest average reduction over 1920 was the 5-ton, which reduced $284. The 5½ to 7½-ton models fell off but $40.

High and Low Peaks in Prices, Average

	Low	Year	High	Year	1921
1000 lb.	689	1916	943	1921	943
1500 lb.	1179	1917	1560	1921	1569
1-ton	1506	1917	1879	1920	1697
1¼-ton	1472	1917	2042	1918	1900
1½-ton	1881	1916	2389	1921	2389
2-ton	2272	1916	2851	1921	2851
2½-ton	2481	1916	3266	1921	3266
3-ton	2976	1916	3954	1919	3705
3½-ton	3009	1916	4144	1920	4132
4-ton	3466	1917	4399	1920	4358
5-ton	4158	1916	5077	1920	4793
5½-ton, etc.	4749	1916	6626	1920	5786



Average Prices by Models, 1916 to 1921, Inclusive

Capacity	1916	1917	1918	1919	1920	1921
1500 lb.	1318	1179	1200	1447	1490	1560
1-ton	1599	1506	1512	1801	1879	1697
1¼-ton	1760	1472	2043	1880	1958	1900
1½-ton	1881	1911	2160	2238	2256	2389
2-ton	2272	2300	2490	2908	2822	2851
2½-ton	2481	2512	2867	3222	3054	3266
3-ton	2976	3099	3332	3954	3748	3705
3½-ton	3009	3270	3486	4123	4144	4132
4-ton	3492	3466	4069	4328	4399	4358
5-ton	4158	4170	4579	4871	5077	4793
5½-ton, etc.	4740	4475	5140	5664	6626	5786

The four models which show an advance in 1921 over the preceding year's prices, the 1500 lb., 1½, 2 and 2½-tons, show an average advance of $121. The fact that these models representing 53.6 per cent of all models produced in 1921, advanced, may be indicative of at least one reason—demand. Yet there may be some in the industry, the dealer for example, who may see in the average price figures submitted some grounds for contention that prices are not as yet normal. On the other hand the manufacturers may contend that inventories are still to be worked off, and that labor and material is still high, and, if we go still further, the parts and unit makers may say that the cost of raw and fabricated material is still high plus a light demand for units. Granting that all of these factors are working, and responsible, yet the figures presented herewith do not tend to convince one that reductions have been as pronounced as were supposed.

Herbig Shows Big Future of Truck Business

By A. V. COMINGS

SPEAKING to an audience of over three hundred motor car and motor truck dealers at the annual meeting of the Ohio Automotive Trade Association at Columbus, Dec. 15, E. T. Herbig, of the general sales department of the General Motors Truck Company, gave the trade a new idea of the business future of the commercial car and showed them where there are big profits to be made in the years to come through the successful selling of motor transportation equipment.

"I believe that no other business during the next decade will offer as great opportunities as the representation of a good motor truck backed by a good organization," said Mr. Herbig. "Now is the time to begin. There will never be a better time." Continuing, Mr. Herbig said:

"I presume that many of you men have given in time past very careful consideration to the subject and fully appreciate the part that trucks should take in the extension of your business. No one appreciates better than I do that you have had to face a condition in the past that discouraged the most optimistic and tended to retard progress along the legitimate channel of merchandising.

"I believe, however, that the wide awake dealer is alive to the irresistible progress of the motor truck, and will take advantage of the opportunity offered when he can be assured that his interests will be properly conserved.

"There is a fast growing purpose on the part of the leading truck manufacturers to promote legitimate merchandising methods in this industry.

"Motor truck manufacturers are making big preparations for the future, planning to open new territory and strengthen old. Dealers who have an appreciation of the reaction that must soon come as a result of restricted buying of the last eighteen months are investigating the truck field with a view to making the best possible connections. A business which offers repeat orders looks good to them."

	Concerns in Industry	Concerns Using Trucks	Per cent of Concerns Using Trucks	No. of Trucks	No. of Fleets	Value of Machines
Apparel	39,775	608	1.5	1,924	54	$3,848,000
Baking	23,941	1,302	5.4	4,557	214	9,114,000
Barrel and Box	3,125	265	8.5	391	18	1,173,000
Bottling	4,780	2,478	51.9	8,673	820	30,355,500
Building	41,659	2,109	5.1	4,395	206	15,382,500
Building Material	2,535	1,059	41.8	2,128	112	8,512,000
Central Station	4,980	652	13.1	3,876	201	11,628,000
Coal	28,996	2,539	8.9	5,733	292	20,065,000
Dairy	6,751	1,216	18.0	2,376	117	5,940,000
Department Store	2,876	1,292	44.9	7,875	579	19,687,500
Drug and Chemical	2,442	415	17.0	882	48	2,646,000
Farming	7,248,544	74,309	1.3	81,311	85	182,311,500
Fire Protection	7,864	2,776	35.3	9,707	513	48,535,000
Floral	11,529	634	5.5	948	27	1,896,000
Furniture	21,044	2,095	9.9	4,134	193	9,508,000
Gas	1,783	350	19.7	2,132	126	4,903,500
Grocery	173,945	3,114	1.8	6,534	418	15,681,700
Hardware	33,860	1,642	4.8	2,279	87	4,558,000
Ice	8,965	977	10.9	1,845	91	5,535,000
Iron and Steel	1,773	758	42.8	1,360	43	4,760,000
Laundry	9,545	1,458	15.3	2,714	174	4,885,200
Lumber	45,850	6,396	14.1	14,964	483	38,863,200
Machinery	2,235	1,384	61.9	2,243	86	6,729,000
Meat	56,257	1,067	1.9	3,989	227	11,967,000
Milling	10,845	784	7.8	1,172	57	3,164,400
Municipal	14,186	965	6.8	3,683	366	11,049,000
Oil	4,023	1,446	35.9	6,184	315	15,460,000
Professional Hauling	12,794	7,834	61.2	16,535	1,549	36,377,000
Street Railway	799	237	29.6	925	63	2,775,000
Tea, Coffee, Spice	1,426	274	19.2	585	46	1,755,000
Telegraph and Telephone	3,230	332	10.3	1,827	87	5,481,000
Textile	2,385	397	16.6	544	28	1,632,000
				208,425	7,725	$546,178,000

Do These Figures Indicate a Rapidly Approaching Saturation Point?

Many Trades Still Unsold

Mr. Herbig drove home to his audience the comparatively small number of motor trucks that have thus far been sold in the United States, especially in certain lines of industry, and passed out to the tradesmen copies of data giving figures of great interest. In addition he used three charts on the stage that showed how great is the field still remaining in various lines for pushing sales of trucks. For instance, he showed that in spite of the fact that over one hundred and eighty-two millions of dollars have been spent for trucks by American farmers, only 1.3 per cent of all farms had motor trucks, leaving near 99 per cent yet to be sold. Of the many thousands of grocery stores that are prospects, only 1.8 per cent have been sold, and of meat markets only 1.9 per cent. Bakeries have been sold up to only 5.4 per cent and florists only a shade more, while furniture stores to the number of 10 per cent of the total have been sold, and nearly 11 per cent of the ice companies.

His figures showed very conclusively that there is still a big field of practically virgin territory for truck dealers to work on, and that just as soon as business begins to show real signs of betterment, the demand for new trucks will be such that dealers will find it very profitable indeed to handle commercial cars.

Referring to the present year's business, Mr. Herbig said:

Regarding This Year's Market

"There seems to be a general impression that the motor truck industry is in a slough of despond, but as a matter of fact that reaction from war and post war booms is not at all surprising. In spite of these depressions, do you know that ten times as many trucks were sold in 1920 as were sold in 1914, and that sales of motor trucks for the first six months of this year were greater by 110 per cent than those of 1914?

"If you will pardon a reference to the company I represent, and the status of

whose business I naturally know better than any other, it will interest you to know that in the past sixty days our Boston distributors have sold ninety trucks in their territory. And to prove that they are not particularly favored by location, I might state that our Chicago branch has been averaging a truck a day consistently and that our Seattle distributor has delivered better than a truck a day for some time past.

"There are other companies which may be doing as well, proving that there is considerable business for those firms who will go after it vigorously and intelligently. Through aggressive methods a great many trucks are being sold that might not otherwise be sold."

Big Market for Farm Trucks

Mr. Herbig cited the recent investigation of the Department of Agriculture of the Federal government to prove the worth of the truck to the farmer. Ninety-five out of every hundred farmers replying to this investigation stated their trucks proved profitable investments, and 92 out of every hundred stated that the principal advantage of motor trucks on the farm was in their saving of valuable time. The greatest disadvantage of the truck on the farm, 59 per cent of these farmers stated, was to be found in the bad roads in country districts, and as the recent Townsend bill will be a wonderful stimulus to road building everywhere, this disadvantage is rapidly being overcome.

Mr. Herbig said of the popularity of the small truck:

"When you consider the wide extent of the retail delivery field, the consolidated school growth, and the farm field, it is not so difficult to understand why more than half the trucks produced in this country in the past have been of one-ton capacity. This model seems to have stepped into a very positive demand."

In outlining the great future possibilities of the motor bus, Mr. Herbig cited the already wide use of the truck for this purpose, and told of the recent amendment of the charter of the city of Detroit to enable the city to purchase gasoline propelled buses for extending its transportation facilities.

Speaking of the possibility of further price changes, Mr. Herbig said:

Prices May Increase

"It is possible that there are certain isolated companies that may reduce prices still further, but taking labor and material costs into consideration, it appears as though the representative companies have gone as far along the reduction road as they are likely to. Many of the larger companies, as a contribution to better business, are operating on a very narrow margin of profit. The principles of profit and loss must be recognized, and regardless of whether a manufacturer may want to make an even lower price for his product, he can go no further than his cost accounting system allows, and it seems the limit has been reached.

"Manufacturers have been making purchases all this year on a hand to mouth basis, consequently in the spring when the rush is due, they will have inadequate stocks on hand and will be forced to purchase what they use wherever they can get it and at the price asked. They have been building comparatively few trucks and this will mean that production must start up on an overtime basis. As a consequence of these conditions, it seems very natural to presume that manufacturers may have to raise their prices to assure them profits. Thus prices may advance and in addition to this there may also be a marked shortage of trucks. Therefore, it is within the bounds of reason that he who buys his truck this winter may find he has saved some money."

Mr. Herbig's outline of the present state of the industry and the future possibilities for motor truck dealers was listened to with the closest attention, and will doubtless have a very marked effect in stimulating a revival of interest in motor truck merchandising throughout the state.

Does the Popularity or Preference for a Certain Model Mean Anything to You?

WHAT will be the ultimate and most economical transportation unit in motor highway transportation? Will it be the smaller capacity truck of the so-called speed design, the 1½-ton, 2½-ton or the 5-ton? Or will it be units between or in excess of these capacities? What will 1922 bring forth?

In dealing with statistics, a better analysis or review could be obtained by using production figures of the various types, for such data would show distribution, if accurate sales figures were obtainable. In other words, the preference of the buyer or popularity of the type or types would be more clearly indicated. While production figures are obtainable up to 1921, and for certain months of that year, accurate results dealing with production could not be computed, at least not at the time the statistics shown in the accompanying table were prepared. Therefore in analyzing production from 1916 to 1921, inclusive, the review is based on models and attention is called to the fact that the 1921 figures do not include all models; that is, where a model is made with two or three wheelbase lengths it is listed as one model. This has eliminated 41 models. Attention is also called to the fact that the figures are based upon the specifications which are appearing in the COMMERCIAL CAR JOURNAL and which were compiled during the last month of the year.

Decline in Smaller Types

It will be noticed that there is a decided decrease in models up to and including 1000 lb. capacity. In 1916 there were 25 1000 lb. models, which number has declined to 4 in 1921. Of the 1200 lb. class, of which there were 4 in 1916, there is none listed today. Coming to the 1500 lb. class we find that in 1916 there were 41 models, which number declined to 14 in 1920 but increased to 21 last year. There were 80 models of 1-ton in 1916 and 61 in 1921. The 1¼-ton has increased from 5 models in 1916 to 8 in 1921. There has been a pronounced increase in the 1½-ton class. In 1916 there were 78 models but in 1918 there were but 43. In 1919 the figures jumped to 109 and this type leads in models in 1921, with 127. The 1¾-ton, which was a compromise at best, dropped out in 1918. The 2-ton, which led the field in 1916 with 135, fell off to 67 in 1918, came back to 101 in 1919 and in 1921 the number was 83. The 2¼, another compromise type, is now extinct.

The figures show a marked increase in the popularity of the 2½-ton, there being 30 models in 1916 and 108 in 1921. But 22 were listed in 1918. The 3-ton appears to be losing ground, as there were 41 in 1916 and 24 in 1921. In 1918 there were but 11. The 3½-ton has increased in favor with the manufacturers, there having been 56 in 1916 and there were 92 in 1921. Of the 4-ton capacity there are three less. The number of 5-ton models has increased, although some have believed that this type was not as popular as during the war when the truck industry proved its worth to the world. With the exception of 1918, when there were 33 models, the number has grown from 41 in 1916 to 60 in 1921. Of the capacities from 5½ to 7½ tons there has been a decrease of over 40 per cent.

What Percentages Show

Analyzing the models from the percentage basis, we find that the 2-ton was most popular in 1916, with 22.8 per cent. The 4-ton was low, with 3.3 per cent. In 1921, however, the 1½-ton led with 20.1 per cent and the 4-ton was low, with 2.3 per cent. The percentages by models of the years 1916 and 1921 are given in an accompanying table.

Models	1500 Lb	1-Ton	1½-Ton	2-Ton	2½-Ton	3-Ton	3½-Ton	4-Ton	5-Ton	5½- to 7½-Ton
1916	7.5	13.5	13.0	22.8	5.0	7.5	9.4	3.3	7.5	4.8 per cent
1921	3.3	9.7	20.1	13.1	17.1	3.8	14.6	2.3	8.8	2.7 " "

In contemplating the statistics consideration must be given to the factors brought about by the war, both before our entry, our participation and the inventories of the manufacturers during and following the armistice. It will be contended that certain models which predominate may suffer in comparison with others not as high in numbers when production is taken into consideration. As previously stated, production figures might reveal results diametrically opposite, particularly in the 1500 to 2-tons capacities. If reliable production figures were supplied for 1921 there is doubt but what they would prove interesting. The figures do show, however, a steady growth in the truck industry, particularly from 1919 to 1921, inclusive. What 1922 will bring forth is a matter of conjecture.

	CAPACITY	500 Lbs.	600 Lbs.	750 Lbs.	800 Lbs.	1000 Lbs.	1200 Lbs.	1500 Lbs.	1 Ton	1¼ Ton	1½ Ton	1¾ Ton	2 Ton	2¼ Ton	2½ Ton	3 Ton	3½ Ton	4 Ton	4½ Ton	5 Ton	5½ Ton to 7½ Ton	TOTALS	PER CENT
1916	Models	...	1	2	4	25	4	41	80	5	78	2	135	1	30	41	56	18	....	41	29	593	....
	Battery	...	1	1	1	4	2	5	3	....	1	0	....	....	2	....	1	....	....	....	....	21	3.5
	Magneto	...	...	1	3	21	2	36	77	5	77	2	135	1	28	41	55	18	....	41	29	572	96.5
	Starter	...	1	3	4	10	2	6	6	1	3	2	11	....	3	3	2	1	....	1	8	67	11.3
	Starter (Optional)	...	...	...	...	1	...	4	8	....	7	....	7	....	1	4	3	3	....	2	....	40	....
	Average Price	...	425	630	690	689	966	1318	1599	1760	1881	2500	2272	2250	2481	2976	3009	3492	....	4158	4740	...	....
1917	Models	2	1	2	2	17	2	33	68	7	70	2	112	1	37	20	67	11	2	53	26	535	....
	Battery	...	1	2	1	6	1	3	1	...	...	...	...	...	...	...	...	...	...	...	....	15	2.8
	Magneto	2	...	...	1	11	1	30	67	7	70	2	112	1	37	20	67	11	2	53	26	520	97.2
	Starter	1	1	1	2	11	2	13	....	....	....	2	10	....	9	....	7	....	1	4	....	64	11.9
	Starter (Optional)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....
	Average Price	440	325	742	852	870	800	1179	1506	1472	1911	2500	2300	2150	2512	3099	3270	3466	3575	4170	4475	...	....
1918	Models	1	...	...	2	10	4	17	49	5	43	....	67	1	22	11	49	8	....	33	10	332	....
	Battery	1	...	...	2	6	4	6	9	....	3	....	1	....	....	....	....	1	....	1	....	34	10.3
	Magneto	...	...	...	...	4	...	11	40	5	40	....	66	1	22	11	49	7	....	32	10	298	89.7
	Starter	1	...	...	2	5	4	6	18	....	8	....	12	....	4	3	4	3	....	4	1	75	22.6
	Starter (Optional)	...	...	...	...	...	...	...	1	....	3	....	1	....	1	1	3	1	....	1	....	12	....
	Average Price	790	...	...	825	791	890	1200	1512	2042	2160	....	2490	1775	2867	3332	3486	4069	....	4579	5140	...	....
1919	Models	...	...	...	2	5	1	15	58	5	109	....	101	....	73	12	79	12	....	65	17	553	....
	Battery	...	...	...	2	4	1	5	10	....	15	....	5	....	4	1	2	....	....	....	....	49	9.2
	Magneto	...	...	...	...	1	...	9	48	5	94	....	96	....	69	11	77	12	....	65	17	504	90.8
	Starter	...	...	...	2	3	1	9	16	3	28	....	16	....	11	5	9	5	....	9	9	126	22.7
	Starter (Optional)	...	...	...	...	...	...	...	...	2	1	....	1	....	...	...	1	....	....	1	1	7	....
	Average Price	...	...	...	460	1401	...	1447	1801	1880	2238	....	2908	....	3222	3954	4123	4328	....	4871	5664	...	....
1920	Models	...	...	...	2	5	1	14	58	5	113	....	100	....	76	13	85	13	....	66	17	568	....
	Battery	...	...	...	2	4	1	5	10	....	20	....	3	....	5	1	2	....	....	....	....	53	9.5
	Magneto	...	...	...	...	1	...	9	48	5	93	....	97	....	71	12	83	13	....	66	17	515	90.5
	Starter	...	...	...	2	5	1	7	16	4	29	....	18	....	10	5	10	6	....	10	9	132	23.2
	Starter (Optional)	...	...	...	...	...	...	1	1	....	1	....	1	....	....	....	1	....	....	1	1	7	....
	Average Price	...	...	...	610	1439	...	1490	1879	1958	2256	....	2822	....	3054	3748	4144	4399	....	5077	6626	...	....
1921	Models	...	...	...	...	4	...	21	61	8	127	....	83	....	108	24	92	15	....	69	17	629	....
	Battery	...	...	...	...	4	...	9	15	3	11	....	6	....	2	2	2	....	....	1	....	55	8.8
	*Magneto	...	...	...	...	...	...	11[1]	43[3]	5	116	....	77	....	105[1]	22	86[4]	15	....	68	17	565[9]	91.2
	Starter	...	...	...	...	4	...	16	31	4	37	....	24	....	24	8	17	5	....	12	6	188	....
	Starter (Optional)	...	...	...	...	...	...	...	...	...	11	....	3	....	3	1	6	2	....	5	....	31	29.8
	Average Price	...	...	...	...	943	...	1560	1697	1900	2389	....	2851	....	3266	3705	4132	4358	....	4793	5786	...	....

* Small figures indicate total, optional or unknown, necessary to balance totals.

Jordan to Further Safety Work

Edward S. Jordan was appointed special representative in traffic and safety by the Highways Committee of the National Automobile Chamber of Commerce. Mr. Jordan has been actively engaged in the promotion of safety work with relation to the highways; and his appointment is an additional step on the part of the automobile industry to enlist its leading executives in the cause of education in accident prevention.

"Education saves lives of children," said Mr. Jordan, following the announcement of his appointment. "We can accomplish most by working through the schools. We must speak for severe penalties on speeding and careless driving, but we can bring about the best results in training the children in safe behavior on the streets and providing playgrounds for their leisure hours."

Don't fail to review the Special Bus Bodies and Equipment that will be displayed in the February Bus Number.

Automobile Export Combine Proposed

An export combine, involving 130 companies, which do a domestic business of over one billion dollars annually, was considered by the automobile makers at the Export Managers' Convention of the National Automobile Chamber of Commerce recently held in New York City.

The combine, as proposed by G. F. Bauer, secretary of the N. A. C. C. Foreign Trade Committee, would enlarge credit resources and lower the overhead cost of foreign trade in cars and trucks.

EDITORIALS

At 'Em Again

FOR the past few years, the motor truck industry has been regarded by a certain class of misinformed state legislators as a lucrative and easy victim for the imposition of heavy taxes. When the question of raising revenues for such and such a project comes before a state legislative body, there is always a small chorus that rushes out and sings "Tax the Motor Truck Industry."

The fundamentals of the whole attitude are wrong. The truck industry cannot stand burdensome taxation any more than any of our other national industries. Taxation has been hindering the industry in many states and will continue to do so until every one of these unfair burdens are lifted.

The tax-the-motor-truck evil arises from several sources. There are some pernicious business influences wielded by interests that find the motor truck is sounding their death knell. But most of the truck opposition springs from a total ignorance on the part of our state law makers of the real value of the motor truck. These men do not realize to what extent our economic system now leans on the commercial car.

Again comes the cry from Connecticut that the truck owners have been excessively burdened by a heavy tax imposition which will force the truck from the road. There is one direct remedy for this evil which has proven successful where tried in other states. At the next election of representatives to the Connecticut Legislature let responsible men, who realize the motor truck industry is an asset and not a liability, be placed in office. These men should not be fed up with the present theory that the truck industry can stand anything. They should see the justice of giving the automobile industry as much as it deserves. We ask for no more than this.

Motor Bus Number Coming

IN order that our readers may obtain a more definite idea of what is really going on in the motor bus field, we have decided to run a special number on this subject next month.

The February issue of the COMMERCIAL CAR JOURNAL will be a Motor Bus Number. Much space will be given in that issue to facts regarding the present situation, showing the great opportunities which present themselves to the manufacturers in the motor bus field.

A Help to the Dealer

ELSEWHERE in this issue, the suggested changes of the dealer contract, submitted by the N. A. C. C. to its members, are given, and which changes, it is thought, will be of mutual benefit to the dealer in the distribution of motor vehicles.

Although the proposed changes may not accomplish anything that the dealer expects, nor will they suit every individual case, it shows at least that the industry is coming to a point where it realizes that the dealer must be given more consideration than he has received in the past. The wise manufacturer will realize that the time is passed when he can hand the dealer a one-sided contract, and designate the number of trucks he must take. The contract of the future will be a good-will proposition. The manufacturer must realize that the dealer is his bread and butter, but the dealer must also realize that he is one of the units of a selling organization and that he must uphold the reputation of the manufacturer and his product.

Of course, the proposed changes are not compulsory on the part of any manufacturer, but they have sufficient merit in them to make it worth while for every motor truck manufacturer to seriously consider adopting the suggestions laid down They indicate a step in the right direction.

It is also interesting to note that the proposed changes in the contract call for repurchasing of the dealers' stock of cars and parts, when the contracts are cancelled by the factory. Such a clause, if included in the dealers' contract, will preclude, to a great extent, the haphazard selection of dealers by the manufacturer. The careful investigation before hand of the dealers' capabilities, his integrity and financial standing, will eliminate a great deal of the changing of dealerships, which is due entirely to the fact that the manufacturer passed out dealer franchises indiscriminately.

If the manufacturer will give his dealers more consideration from now on, it is an assured fact that the industry will be in a much healthier state by the end of the year 1922 than it has ever been in previous years. The sales of motor trucks during 1922 will increase for the manufacturer who is ready to help his dealers by giving them a square deal, and the year 1922 will be a good year for the dealer who will exert himself to sell motor trucks right.

1922 MOTOR TRUCK SHOW

IN the following pages are the exhibits of most of the representative motor truck, body, parts and equipment manufacturers in the industry. Every individual in the industry will be vitally interested in the contents of each and every exhibit.

It will pay *you* to read the messages of the livest manufacturers in the truck industry. This means securing the information and data which you need to conduct your 1922 business on a profitable basis.

For the purpose of securing further information concerning the products featured in these exhibits, we suggest that you turn to the Advertisers' or the Buyers' Index in this issue, where you can readily locate the page containing the complete advertisement of all manufacturers who are represented in the 1922 Motor Truck Show.

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1922 MOTOR TRUCK SHOW

WARD LA FRANCE TRUCK CORPORATION

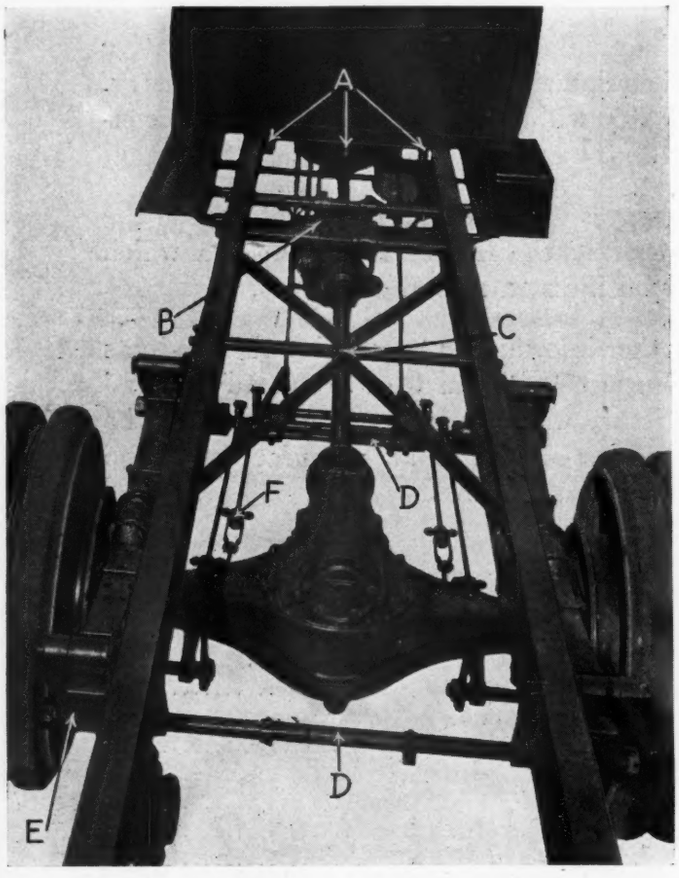
THIS exhibit illustrates the new Ward LaFrance 2½–3 ton chassis, which also typifies the construction of the heavier models. The present line of trucks, manufactured by the Ward LaFrance Truck Corp., Elmira, N. Y., embodies many interesting engineering features, and all models are claimed to be of oversize construction throughout.

The Model 2B, 2½–3 ton chassis, illustrated, is exceptionally high-powered, with an enclosed valve, removable head engine of 4⅜ in. bore and 5¾ in. stroke, which is indicative of the heavy-duty design of all models. To obtain proper heat control, and reduce crank-case dilution, large radiators of the company's own design and manufacture, are used in connection with a thermostat and radiator shutter, which latter, it is claimed by the company's engineer, considerably increases both the efficiency and life of the engine.

The rear view illustrates several points of design of the chassis proper. The method of bolting together the deep-sectioned side rails with tubular cross members, it is pointed out, eliminates the drilling of holes in top and bottom flanges or stiff spots in the frame, and gives the desired flexibility. The cross-brace, bolted through the center, maintains alignment and removes stresses from the engine legs, while the solid cross-bars at each end of rear springs hold the weight without twisting the rails. This view shows also the oil reservoir type of rear-spring shackle, this system being used throughout the chassis, the three-point underslung suspension of the four-speed transmission, the three-point suspension of cab and such details as the straight pull, quick adjusting brake rods, flat springs, etc.

The Ward LaFrance Cab

Among the features of this cab may be mentioned the sliding windows; divided windshield, giving lots of ventilation; hinged metal floor-boards, having special clips and thumb nuts to hold it in place; divided cushions with special heavy springs; hanging doors can be furnished if desired instead of curtains. The cab seats three comfortably.



Bird's-Eye View of the Ward LaFrance Chassis, Model 2B

The three-point suspension of the cab is illustrated at (A), and the three-point suspension of the transmission at (B). The cross-brace (C), bolted through center, maintains alignment and removes stresses from the engine legs. Letters (D) indicate the solid cross-bars at each end of the rear springs. (E) shows the oil reservoir type of rear spring shackle, while (F) indicates the thumb-nut arrangement for quickly adjusting the brake rods.

This company has also given care to the design and construction of its cabs, which are of their own manufacture. The cushion is of ample width for three men, made up of good material, with heavy, comfortable springs, and is divided in the center so that wear can be equalized. The metal floor-plate is hinged at the rear to provide accessibility and the double, built-in metal shield allows both clear vision and ventilation. The entire cab is heavily framed up with glued joints and in addition has a three-point suspension to relieve racking. Fore doors are hung when wanted.

New prices on Ward LaFrance chassis announced in this issue are as follows:

2½–3 ton	$2990
3½–4 ton	$3990
5–6 ton	$4590

All prices f.o.b. Elmira, and include regular catalog equipment.

(Advertisement)

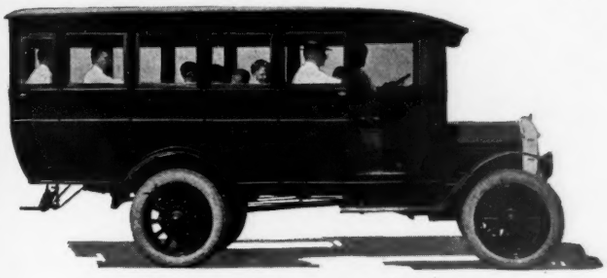
1922 MOTOR TRUCK SHOW

BESSEMER MOTOR TRUCK COMPANY

THE line of this company, which includes models of 1, 1½, 2½ and 4 ton capacities, is applicable to practically any type of transportation, whatever the nature of the business or condition of road. The line is very flexible in that it is adaptable to hauling for the farmer, the manufacturer or merchant. The one-ton models are also equipped with bus bodies for rural or interurban passenger and school children transportation.

The accompanying illustrations are those of four Bessemer models. These, together with the following resume of the most prominent units, will convey a fair idea as to the reliability and quality of these models.

Bessemer Model J-2 2½ Ton



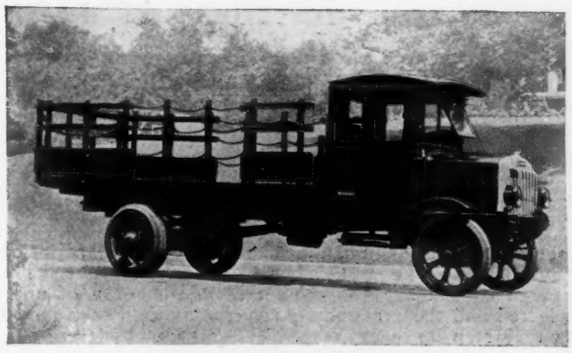
The Bessemer 18 Passenger School Bus

One-Ton Model. The engine is a Continental, Model N, with a bore and stroke of 3½ x 5 in., respectively. Lubrication is force feed. Ignition is by a Bosch magneto and carburetion through a Stromberg carburetor. From the engine the power is transmitted through a Fuller gear-set, from whence it is carried through an Arvac universal joint equipped propeller shaft to a Torbensen internal-gear rear axle. Steering is through a Ross steering gear. Pneumatic-equipped throughout.

Bessemer Model H-2 1½ Ton

One and a Half Ton Model. This model is also known by the model letters H-2. It is powered by a Continental, Model N¾; having a 3¾ in. bore and 5 in. stroke. Bosch magneto and Stromberg carburetor. The clutch is a Borg & Beck and the transmission a Brown-Lipe. In other respects this model is practically identical with the one-ton model in design and quality.

Two and a Half Ton Model. The Bessemer Model J-2 is equipped with a Model C4 Continental engine, having a bore and stroke of 4⅛ in. x 4¼ in., respectfully. Carburetion and ignition is the same as in the other models. The clutch, transmission and rear axle are also the same differing only in capacity. Gear-set also provides four speeds forward instead of three in this capacity.



Bessemer Model K-2 4 Ton

Four-Ton Model. The Bessemer Model K-2, chassis is furnished with a Continental E7 engine. It has a bore and stroke of 4½ x 5½ in., respectively. The only change in the make of the units is the employment of Spicer universal joints instead of Arvac, which are used exclusively in the lighter models.

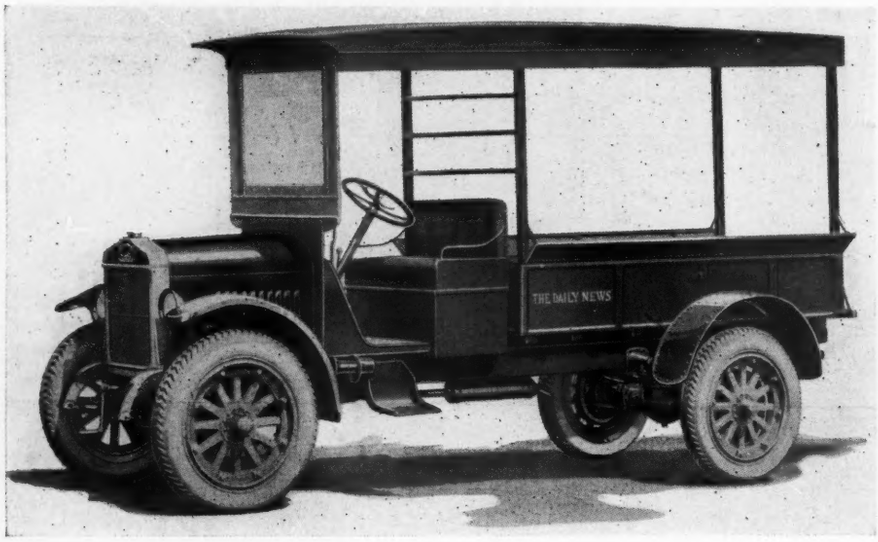
(Advertisement)

(Advertisement)

1922 MOTOR TRUCK SHOW

EUGOL MOTOR TRUCK CO.

THE design of the Eugol speed truck is along strict truck requirements in every detail, combining four truck-service essentials: power, speed, strength and endurance. The complete construction and assembly is such as to permit the truck to negotiate all manner of roads satisfactorily and economically.



It is a quality product in that it contains only the best-known and proven standard units.

To convey a fair conception of its quality, a list of some of the outstanding features is given. The engine is a Buda, mounted in unit with clutch and transmission. The front and rear axles are Timken. Ross steering.

Standard equipment includes pneumatic cord tires, tire pump mounted on transmission, Alemite lubrication system, speedometer, jack and complete set of tools. The electrical equipment includes a Westinghouse starting and lighting system, battery, electric headlights with dimmers and non-glare lenses, tail light and horn.

This company also specializes in various standard bodies such as express with or without canopy top, platform stake, grain, stock, passenger carryall, school, jitney and buses.

A choice of three wheelbases is offered; namely, standard, 135 in.; long, 160 in.; and "Contractor's Special," 110 in. Latter job is equipped with a one-yard gravity dump body.

ACME MOTOR TRUCK CO.

ACME builds a complete line of chasses, bodies, and equipment. Seven models comprise the Acme line of worm-drive trucks in the following rated capacities: ¾, 1, 1½, 2, 2½, Special 2½, 3½, and 5 ton. Any of these models can be furnished for tractor use. Acme builds in its own plant as standard equipment sixty-four sizes and types of wood and steel bodies, giving a wide range of truck capacity, and body equipment.

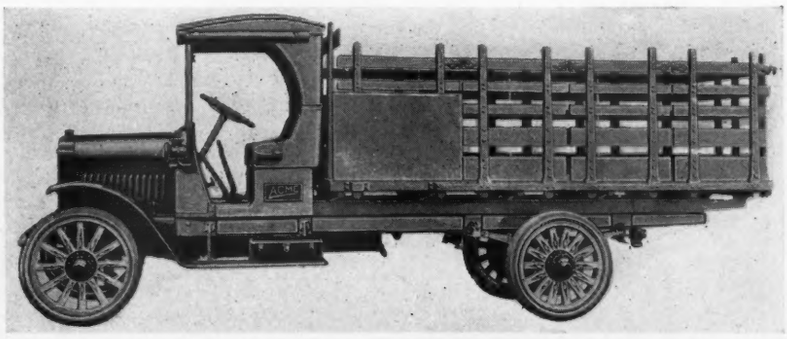
The Acme proved unit policy and Acme standardization have produced a well-balanced, consistent line. The utmost consistency has been used in the make of units selected and the graduated sizes employed in each model as they step up in capacity. This has resulted in a balanced truck of each size.

A different sized or type of engine is used as the models step up in capacity. For instance, there are five different sizes and types of engines to serve seven different models of trucks of six different carrying capacities. The Acme "Proved Unit" method gives a definite choice in a selection of engines designed and built for a particular capacity.

This principle of applying the right size engine to each capacity of truck is practiced by Acme on all other units as transmission, clutch, axles, steering gears, springs, frames—in fact, this is carried out to each individual part. There is the utmost of consistency in the application of the smallest part to the principal units of each size of truck.

The Acme dealer franchise embodies a well-formulated plan which takes care of practically every known condition in motor truck selling. It promises a well-defined and carefully-charted course of merchandising activity which embraces all departments of distribution.

The Acme plans for 1922 promise selling co-operation and assistance of a most unusual kind. Acme dealers are assured able and aggressive aid in making new outlets and developing present markets. The Acme family now includes trucks for every conceivable kind of hauling. There are speed trucks, trucks for buses and vans, for construction work, for road-building, and for general hauling.



Acme 2–2½ Ton Chassis With Standard Acme Stake Body

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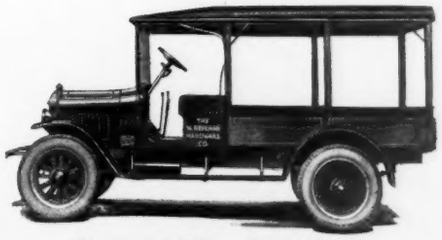
1922 MOTOR TRUCK SHOW

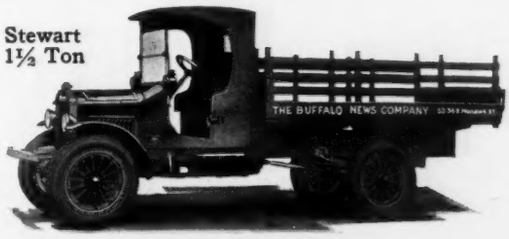
STEWART MOTOR CORPORATION

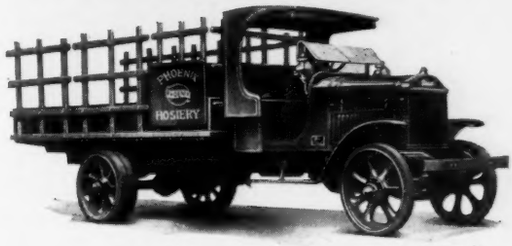


Stewart ¾ Ton Speed Truck

Stewart 2 Ton

Stewart
1½ Ton





Stewart 3½ Ton

THE STEWART POLICY behind this announcement is based on a complete readjustment of material and labor costs effective January 1st. The new prices are as follows: ¾ ton, $1195; 1 ton, $1395; 1½ ton, $1790; 2 ton, $2090; 2½ ton, $2290; 3½ ton, $3090.

Raw materials are considerably lower, of better quality—and more accessible; labor is less costly and more productive. Throughout our entire plant, we have effected economies, lowered overhead, increased factory capacity; higher standards of efficiency prevail throughout.

Behind all these is the solid financial foundation upon which the Stewart organization rests. Stewart modern factories, equipped for quantity production, have started the new year towards lasting prosperity.

THE BIGGAM TRAILER CO.

THE BIGGAM TRAILER CO., of Milwaukee, Wis., manufacturers of the Biggam line of trailers are offering truck manufacturers a contract and sales plan for selling trailers through their sales organization, which seems to be the logical solution of trailer distribution.

The truck manufacturer, by adopting the plans outlined by the Biggam Trailer Co., will place themselves in a position to analyze the problems of their customers and install motor truck and trailer equipment best suited to their customers' needs. This company's plan is to furnish Biggam trailers to truck manufacturers, said trailers to be sold through the manufacturer's sales organization, and carry the trade name of the motor truck manufacturer, but to carry the guarantee plate of the Biggam Trailer Co., thus relieving the truck manufacturer from all liability as to guarantee.

Their plan includes publicity work covering the various trade names under which Biggam trailers will be sold. It includes field sales promotion work covering the training of dealers and salesmen in the making of surveys in order that the proper trailer equipment will be installed. Their plan does not necessitate the physical handling of trailers by the truck manufacturer to any extent whatever, the trailer company shipping direct to the dealer or purchaser according to instructions from the truck company. The Biggam line includes following types:

Biggam Four-Wheel Reversible Trailers.

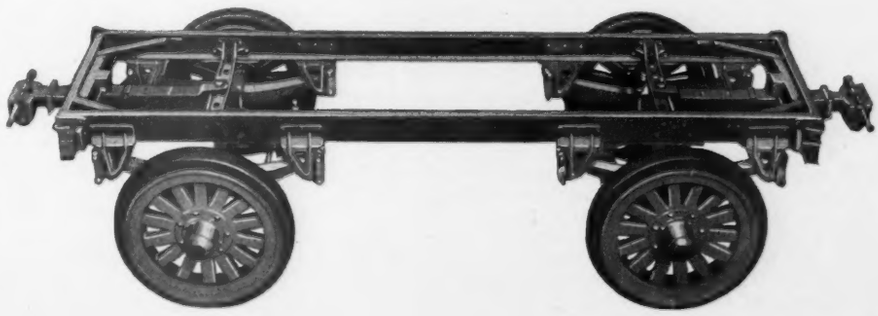
Biggam Four-Wheel Non-Reversible Trailers in capacities of 2, 3½ and 5 ton.

Automatic coupling semi-trailers in capacities of from 2 to 8 ton.

Pole trailers in capacities of from 2½ to 7½ ton.

Also the light-type jobs for the farmer and small merchant, who uses a Ford delivery outfit.

The Biggam Four-Wheel Reversible trailer has quite a few features not embodied in any other trailer on the market, these features being necessary to a properly operating trailer. The accompanying illustration will give a general idea of the design and construction of their reversible job.



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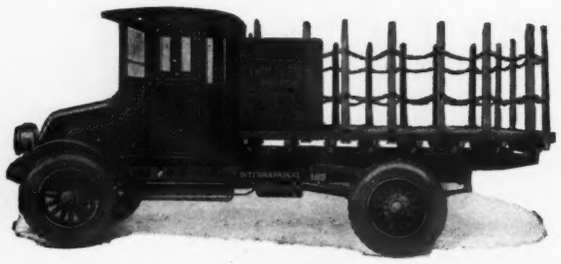
1922 MOTOR TRUCK SHOW

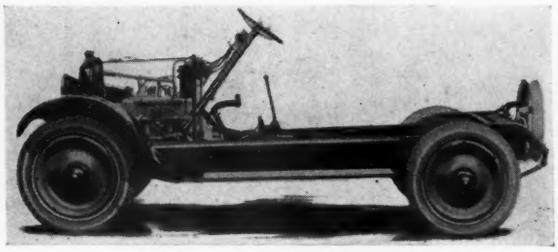
International Harvester Co.



THE INTERNATIONAL MOTOR TRUCK shown is Model 41, capacity 4000 pounds. Equipped with pneumatic cord truck tires and with regular International chain-stake body and enclosed cab. The International line offers a truck for every hauling purpose. There are eleven sizes, including a 1500 pound speed truck, and 2000, 3000, 4000, 6000 and 10,000 pound trucks for heavy hauling work. Suitable bodies can be supplied for any line of business. The Model S International Speed Truck is equipped regularly with pneumatic cord truck tires, power tire pump, electric lights and starter, and embodies many features exclusively International.

All International models have four-cylinder, block-cast, water-cooled engines, gravity fuel feed, and positive circulating-splash lubrication. Clutch is dry-plate, multiple disk, and transmission sliding gear, selective.

REO MOTOR CAR CO.

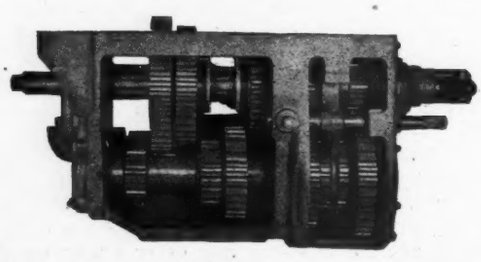


The New Reo Taxi Chassis

Price, $1350 f.o.b. Lansing, plus Federal tax

DESIGNED and built expressly for taxicab service, we announce our new taxicab chassis, to be known as Model V. It is a combination of the best units of Reo passenger cars and Reo speed wagons, and mounted on a frame especially designed for the strenuous duty in the field which it enters. Durability, stamina, dependable self-starting, quick pick-up and ample spring resiliency—these together with economy of operation and low cost of maintenance are a few of its distinctive qualifications.

General Motors Truck Company

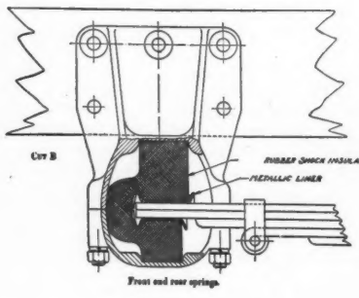


THE GMC TWO-RANGE TRANSMISSION, standard equipment in GMC models of two-ton capacity and larger, marks a new step forward in motor-truck development, because it gives both speed and pulling power in a single chassis with an economical power plant.

The transmission is nothing more than an ordinary standard 4 speed transmission, with two sets of driven gears, giving two different speeds to the countershaft. This gives two distinct power ranges in all speeds except direct drive or high.

With this transmssion a higher-speed rear axle can be used, giving a truck the maximum road-speed needed and, by transmitting the power through the lower range of the transmission, 30 per cent more pulling power can be obtained than would be possible with the regular type transmission, the same power plant, and same rear-axle reduction.

International Motor Company



The ends of the springs are embedded in blocks of rubber which are carried under compression in housings attached to the chassis frame.

THE MACK SPECIAL SHOCK INSULATED BUS embodies the new and exclusive feature of using rubber in both front and rear spring suspensions as an actual shock insulator.

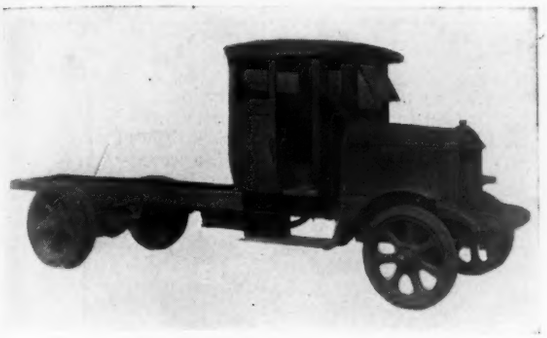
Equipped with solid tires, this equipment produces riding comfort equivalent to that afforded by pneumatics and at an even lower operating cost than that of ordinary buses equipped with solid tires.

(Advertisement)

(Advertisement)

1922 MOTOR TRUCK SHOW

MACCAR TRUCK CO.



MACCAR TRUCKS

The only truck built with a demountable power plant.

Model L	1½ Tons	$2700.00
Model H-A	2 Tons	3100.00
Model H-2	3 Tons	3400.00
Model M-2	4 Tons	4200.00
Model G	5-6 Tons	4950.00

SIGNAL TRUCK CORP.

MANUFACTURERS of motor trucks ranging from one to five tons capacity. The line is known as the Signal and the corporation is located in Detroit, Mich.

Defiance Motor Truck Co.

THE DEFIANCE MOTOR TRUCK CO. announces its 1922 line of motor trucks, with list prices as follows:

Model G, 1 ton speed truck chassis, $1695. Price includes electric lights and starter, seat with Marshall cushions, pneumatic cord tires, power tire pump, speedometer, electric horn, and a complete set of tools.

Model D, 1½ ton chassis, $2095 Price includes Prest-O-Lite equipment, seat with Marshall cushions, radiator guard, bumper, pneumatic cord tires, power tire pump, speedometer, and a complete set of tools.

Model E, 2 ton chassis, $2275. Price includes Prest-O-Lite equipment, seat with Marshall cushions, radiator guard, bumper, pneumatic cord tires, power tire pump, speedometer, and a complete set of tools.

THE AUTOCAR COMPANY

New 2 Ton Heavy-Duty Autocar

(4 cylinder motor)

Dimensions	Type XXVII H	Type XXVII K
Length of wheelbase	114"	138"
Length over all from front bumper to end of frame	213¼"	237¼"
Width over all to outside of hub caps, front wheels	70¼"	70¼"
Width over all to outside of hub caps, rear wheels	73½"	73½"
Length of frame back of seat	131½"	155½"
Turning circle	35'	50'
Unladen chassis weight	5200 lb.	5350 lb.
Overall capacity (chassis, body and load)	1400 lb.	1400 lb.
Price, f.o.b. Ardmore, Pa.	$2950	$3075

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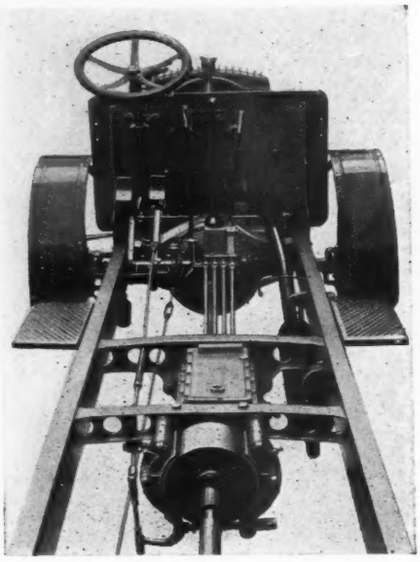
1922 MOTOR TRUCK SHOW

G. A. Schacht Motor Truck Co.



SCHACHT "TEN-SPEED" TRUCKS provide increased pulling power and vehicle speed at reduced engine speed. An exceptionally clean-cut design, with all units thoroughly accessible, marks the new series of Schacht trucks. Made in five sizes: 2, 3, 4, 5 and 7 tons. The above illustration is characteristic of all models.

Ruggles Motor Truck Co.

RUGGLES TRUCKS are made in two models, the one-ton and the two-ton.

The one-ton truck is equipped with a Continental 34 h.p. engine, Brown-Lipe dry-disc clutch and transmission, and special Ruggles Columbia three-quarter floating rear axle. It carries a starting and lighting system as standard equipment.

This truck is furnished in a choice of three bodies at the same cost—express, canopy top or stake. Any special body may be fitted to the chassis.

The two-ton Ruggles has the special Ruggles 38 h.p. engine and Ruggles double-reduction rear axle. The transmission is in unit with the motor and allows four speeds forward and one reverse. The design and construction of both models is such as to provide beauty, endurance and economy of operation.

Canadian Factory: Ruggles Motor Truck Co., Ltd., London, Ont.

TRANSPORT TRUCK CO.

TRANSPORT TRUCK COMPANY opens the new year with a new and complete line of specialized trucks for every service, and a scale of new low prices. The models are built entirely of new, clean stock, and are priced on basis of present costs.

The Transport announcement features six models, from a fast one-ton speed job to a Model 75 for all duty in the five-ton range. The extraordinary amount of equipment included in the regular chassis price is also unusual.

The new line totals two more models than Transport has ever presented before. Three years ago, the first Transport trucks were just going on the market. Today, with one of the finest and most completely equipped truck factories, the company is expanding its market wherever motor transportation is used. It is constantly increasing its representation in all fields by the best established distributors. It has a substantial foreign representation.

Following are the new Transport models and prices:

Model 15, Rapid Transport, fast one-ton speed job, equipped with pneumatic tires, electric lights and starter, seat, windshield, fenders, and runboards $1295.00

Model 25, 1½ ton capacity, complete with electric lights, bumper, radiator guards, hubodometer and motometer $1495.00

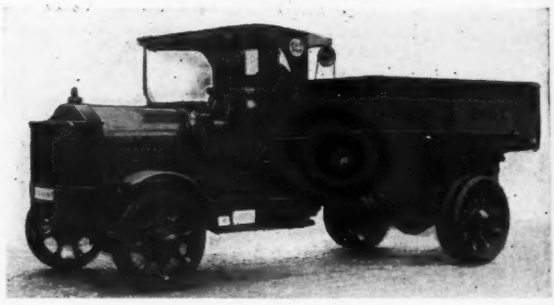
Model 35, 2 ton capacity, equipped with radius rods, drive shaft brake, four-speed transmission and electric lights, bumper, hubodometer and motometer $1885.00

Model 55, 3 ton capacity (Same equipment as Model 35) $2385.00

Model 60, 3½ ton capacity (Same equipment as Model 35 ..... $2585.00

Model 75, 5 ton capacity (Same equipment as Model 35) $3485.00

THE TIFFIN WAGON CO.



THE TIFFIN LINE consists of five models: 1½ to 7 tons capacity. The Tiffin truck is a "specialized vehicle" as it is only built from standard units. This truck has been on the market for a number of years and has achieved a wonderful reputation because of the high-grade units, splendid design, construction and performance in service.

The Tiffin Co., is also a pioneer in the manufacturing line of municipal equipment, particularly street cleaning and garbage equipment. Their line of Motor-Driven Street Flushers and Street Sprinklers includes the latest ideas in this type of equipment, which is used by many large cities throughout the United States and Canada. Their position in the street flushing field is unique in that they are equipped to furnish the street-cleaning equipment complete and also to furnish complete service on same.

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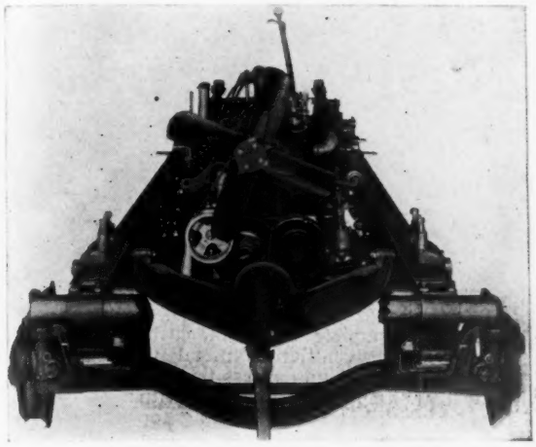
1922 MOTOR TRUCK SHOW

Selden Truck Corporation



SELDEN "IN-BUILT QUALITY" MOTOR TRUCKS have full flexible construction throughout. For instance, the engine is three-point suspended, but in addition it is flexibly suspended at these points. The front of the engine is carried in a cradle which is hung as near the center of the crankshaft as possible, allowing a rocking from side to side. The rear of the engine is hung on two flexible, hinged pins from specially designed castings. These castings are solidly attached to the rear legs of the engine and extending from them through the frame is a large pin, hung in a hinged joint.

Ward Motor Vehicle Company

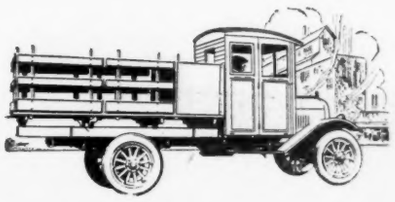
WARD ELECTRICS are built in six sizes—from 750 to 10,000 lbs. They are built to last more than ten years (some of them have been running more than fifteen years), to operate at controlled speeds—about twice as fast as the horse and wagon and about as fast as traffic conditions and frequent delivery stops permit—and to operate on short-haul or frequent-stop routes for 20% to 35% less than any other type of delivery vehicle.

They are a logical addition to every dealer's line, because they enable him to offer his prospect the most economical delivery vehicle possible for short-haul or frequent-stop routes, recommending, of course, gasoline trucks on long routes.

The Ward Special, for instance, operates at seven cents a mile on the average route. The Ward WA, with nearly twice the load capacity of the Ward Special, can be operated at eight cents a mile. These figures include everything except interest, depreciation and garaging.

The dealer policies of this company were described in the September, 1921, issue of the COMMERCIAL CAR JOURNAL.

Pioneer Truck Company



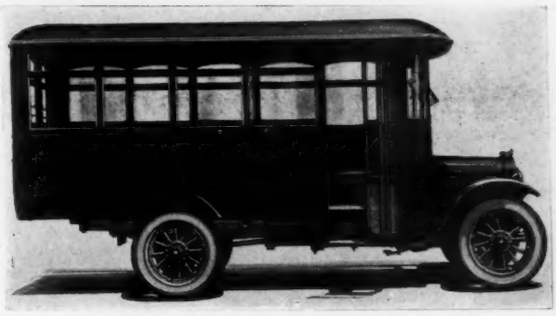
THIS exhibit of a stake-express body equipped, Pioneer one-ton speed job for use in factory hauling is but one of the many services to which this unit is adaptable. With a body for every kind of business, this job is well qualified to serve in rural and suburban delivery work, factory work and farm work.

The engine is of the Golden-Belknap & Schwartz make, 3¾ in. x 4¼ in.; 22.5 hp., N. A. C. C. rating. Fuel is fed by vacuum to a Zenith carburetor. Lighting is by Auto-Lite system, and ignition by Bosch high-tension magneto.

From the engine, power is transmitted through a Detroit gear-machine clutch to a Grant-Lees transmission providing three speeds forward and one reverse. Propeller shaft is equipped with a Thermoid universal joint. Total gear reduction in high is 6.1; in low, 25.1. Pneumatics, 32 x 4½, are used on all four wheels.

The standard equipment includes electric generator and starter, battery, moto-meter, electric horn, dash light, ammeter and Stewart speedometer.

Republic Truck Sales Corp.



THE REPUBLIC RAPID TRANSIT is designed by truck engineers and built of sturdy truck-size units by the world's largest exclusive truck manufacturer.

The Republic Rapid Transit has speed on the road without sacrifice of economy in operation and upkeep. Big pneumatic tires protect its machinery and its load.

Swung low on a rugged wear-resisting chassis of 124 in. wheelbase, the Rapid Transit is nine trucks in one. Vary the body and you have a dependable, economical, continuously operating vehicle for passenger service, for truck gardeners, for grain hauling, for lumber hauling, for transfer service for dairy service, for bus service and others.

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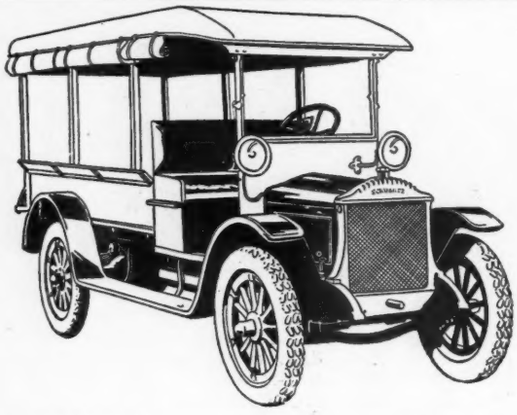
1922 MOTOR TRUCK SHOW

Schwartz Motor Truck Co.

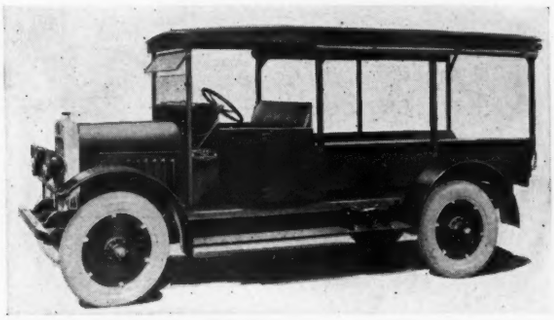


ACCORDING to the above manufacturer, speed-truck operation is lifted above and clear of the problematic when considered in connection with the new Schwartz Highway Xpress, which is a well and scientifically built job. It is a speed truck in every sense of the word and is not a composite of passenger car units with a truck body.

Units making for maximum service and adaptability in speed-truck operation are used throughout. The following is a brief list of some of the most important parts, all of which are well known:

Lycoming, Model LB engine; G & O radiator; Carter carburetor; Westinghouse ignition system; Fuller clutch and transmission; Merchant & Evans universal joints; Ross steering gear; and Eaton rear axle.

GRAMM-BERNSTEIN



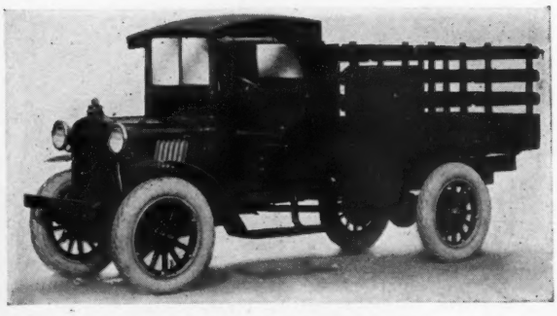
CHASSIS complete with seat, cushions and back, fore doors, ventilating metal windshield, full storm curtains and express flareboard body, 44 in. wide by 8 ft. long by 12 in. deep, with 5 in. flare at 45 degrees, with extension standing top and full curtain side and rear. Bed of body 34¾ in. from ground when empty. A very popular type for speed trucks, especially where complete protection from bad weather is required.

No converted passenger car units—all truck construction. Deeper and heavier straight-line frame. No bends or horn front-ends—bumpers. All copper and brass radiator. No terne plate or galvanized sheet used. Disc aeroplane-type wheels have four times strength of spoke wheel and insure longer tire mileage.

Reheating device on motor gives great economy—average over 15 miles per gallon. Longer, easier springs, less loss to damageable or perishable goods.

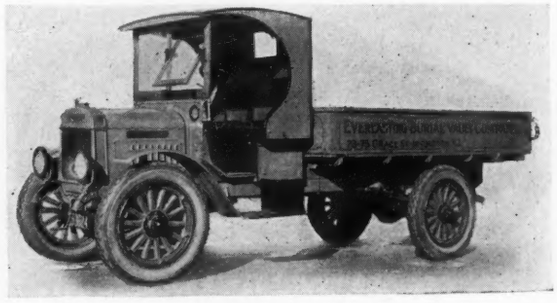
DENBY MOTOR TRUCK CO.

Denby Model 33, 1½–2 Ton



Denby Model 31 Speedster

DAY-ELDER MOTORS CORP.



SHOWING Model A-S, 1–1½ ton Speed Truck with 35 x 5 pneumatic tires and electric lights as standard equipment, at $1600.

The Day-Elder line of motor trucks ranges in size from one to six tons and at popular prices. A size for every capacity requirement.

Extraordinary conditions, sometimes, makes deviation from regular standard specifications necessary. The manufacturers will build any special specification into any one or all sizes manufactured by them.

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THE PREST-O-LITE CO., INC.

Prest-O-Lite

The All-Weather Truck Light

WINTER'S roughest going cannot affect the efficiency of the Prest-O-Lite Gas Lighting System. The sturdy little Prest-O-Lite gas tank never freezes up and it is so ruggedly built that it will withstand the jars and bumps and vibration on any road. It will outlive the motor vehicle.

Costing less to install and less to maintain, Prest-O-Lite gas is the one economical light for truck owners.

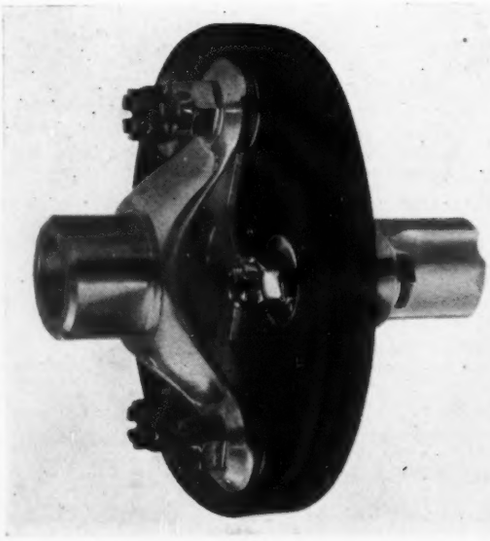
These are the reasons why Prest-O-Lite gas lighting equipment is helping the manufacturer to sell his truck. And service is obtainable everywhere. Through a nation-wide network of more than 22,000 Exchange Stations empty tanks may be exchanged for full ones at a nominal charge for the gas only.

The Prest-O-Lite Company, Inc., Small Tank Sales Department. General offices: Carbide and Carbon Building, 30 East 42nd Street, New York; 599 Eighth Street, San Francisco. In Canada: The Prest-O-Lite Co. of Canada, Limited, Toronto.

ARVAC MANUFACTURING CO.

THE ARVAC MANUFACTURING COMPANY, of Anderson, Indiana, announces the addition of the Arvac Disc Joint to the already well-established line of metal universal joints which they have manufactured for the past five years. The new disc joint will be manufactured in three sizes, intended to cover the entire speed wagon, light truck and passenger car and a large percentage of heavier truck installations between clutch and transmission.

As shown by the accompanying illustration, the design includes a centering member which, it is claimed, keeps the propeller shaft concentric at all times, and minimizes vibration by supporting the metal parts of the joint in a positive manner, causing them to revolve about a true axis—all of which tends to greatly increase the life of the discs.



The centering member consists of a centering ring carrying a non-metallic, sound-deadening, oilless, replaceable bushing supported by three radial arms which securely lock it in a concentric position on the flange-spider bolts. The centering shaft is pressed into the tubular spider and has a spherical surface, providing for both angular and longitudinal movement.

The cupped washers that grip the fabric have no sharp cutting edges and no irregular surfaces to cut into the outer layers of fabric and set up disintegration. It is claimed that the concave-convex form of the washer not only makes it possible to secure the same gripping area with a small washer diameter, thereby reducing internal friction by increasing the distance for flexing between the washers, but also permits driving by abutment without resorting to special discs, which are undesirable from the service standpoint.

The flange spider hubs are all turned to S. A. E. standard dimensions to remove excess weight. The torsional strain is removed from the tube weld by a patented process of swaging the tube back of the weld into slots or keyways milled into the tubular spider hubs.

The entire design has been perfected after eighteen months of research, development and testing by the Arvac Manufacturing Company.

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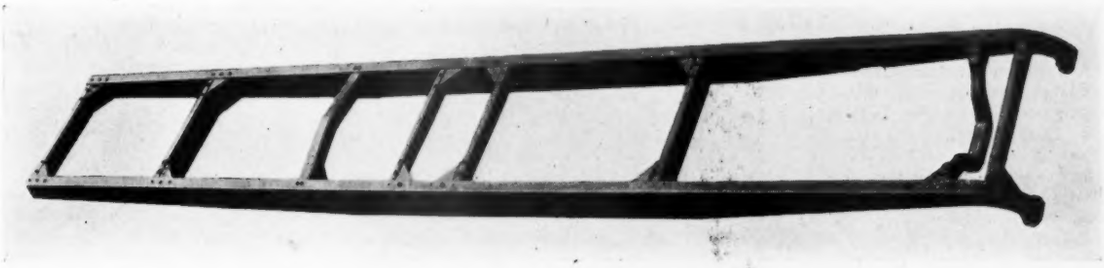
Parish & Bingham Corporation

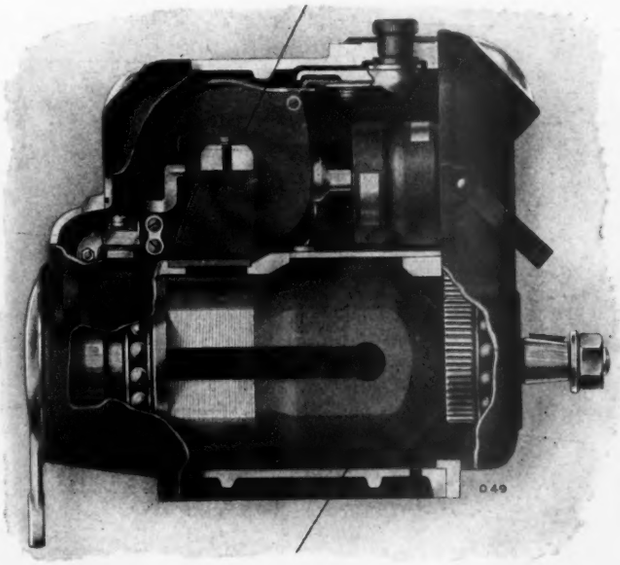


IN the stamping and assembling of your frames your plans are carried out in accordance with your wishes, or, if you prefer, our engineering department will render you special assistance. All the way through, frames we build have individuality and character, and whether you tell us just what kind of vehicle you are producing and put it up to us to build a frame that will fit perfectly, or, whether you come to us with your complete plans and ask us to carry them out, then you will find, in either instance, that the service of this organization, with its ample facilities, will give you a service that will fulfill your every requirement. A large choice of stock tools assures you of the proper design required for your type car or truck with a great saving in tool expense.

Our experience of seventeen years of frame building is at your disposal.

THE SCINTILLA MAGNETO CO., INC.

Stationary Winding



Rotating Magnet

THIS exhibit shows a cross section of Scintilla magneto, which is made in Switzerland. It is a new entrant in American automotive field.

The Scintilla employs an entirely new construction. The permanent steel magnet, the strongest part in any magneto, rotates, and the delicate parts, such as the winding, contact breaker, distributor, carbon brushes, etc., are stationary. This new construction makes for utmost simplicity and ruggedness, and insures dependable performance, long life, minimum wear and complete accessibility.

The platinum contact points are stationary, and are located in a dry and oil-proof chamber. Therefore, the points are always kept clean, with the result that good contact is made, at all speeds, and a powerful spark is produced. In addition to this important feature, the entire contact breaker can be taken off instantly by hand, for inspection.

In the Scintilla the entire magnetic circuit is laminated; that is, the poles of the rotating permanent magnet, the pole shoes and the core of the winding. Maximum efficiency is thus obtained, especially at slow, or cranking speed, when the Scintilla furnishes a very powerful spark, so necessary on truck and tractor engines. Also the peculiar shape of the rotating magnet contributes much to this powerful spark at slow speed.

The Scintilla has no slip or collector ring. Furthermore, all electrical parts are in the upper part of the magneto, and fully protected against dust or moisture. Excessive oiling does not affect this magneto, thus eliminating short-circuiting.

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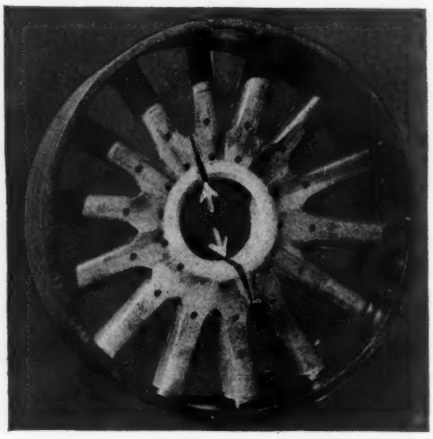
HOOPES, BRO. & DARLINGTON, INC.

THE accompanying exhibit is that of the Hoopes metal felloe truck wheel recently introduced by Hoopes, Bro. & Darlington, Inc., West Chester, Pa., and described in the December, 1921, issue of the COMMERCIAL CAR JOURNAL, page 37. Extensive experience, covering a period of over fifty years, in the manufacture of wood wheels of all descriptions, qualifies the Hoopes, Bro. & Darlington, Inc., to its statement that the combination wood and metal wheel has done away with the only weak point of all wood wheels.

The weakest point of the wood motor truck wheel is where the spoke shoulder seats in the wood felloe. Through the swelling and shrinking of the side grain in the wood felloe, and the constant hammering in service, the end grain of the spoke shoulder seats in the felloe, and starts an action which, after a certain time, results in a loose wheel. Although this loosening tendency has been somewhat counteracted by constructing spokes with larger shoulders, thereby distributing the bearing pressure over a greater area, and by the employment of metal washers between spoke shoulders and felloe, permanent integrity throughout the life of a truck wheel was not secured until the advent of the metal felloe wheel. As the full end-grain of the spokes bear against a metal rim and have a perfect seating against metal in the hub, practically all trouble from shrinkage has been eliminated, as there is practically no shrinkage with the end grain of wood.



The Hoopes Metal Felloe Truck Wheel
The arrows point to the hickory wedges which are located at points diametrically opposite

The operations for assembling are as follows: The spokes are painted on the ends with white lead, and forced into the sockets of the rim by hydraulic pressure. The metal felloe is heated and expanded ⅛ in. in diameter, and placed on the assembling table where the spokes with sockets are put in place. Wedges are then driven in to make the whole wheel tight. As the metal felloe cools, it contracts, a tremendous pressure is exerted on the outer ends of the spokes which not only wedges them absolutely tight in the mitres, but also assures a perfect set-up at the outer end.

THE CORCORAN-VICTOR COMPANY

IN this exhibit is shown a few of this company's complete line of lamp products, which line includes electric and oil tail lamps, lamp brackets, spot lights, parking lights, etc. This exhibit shows some of the popular models this company builds for motor trucks. All products manufactured by this company are known by the trade name "Victor."

No. 403. A massive gas head-lamp for high-grade trucks; mirror 6 in. in diameter; lamp body diameter 10 in.; prop centers 8½ in. Body is drawn from heavy-gage steel in one piece with all parts solidly riveted. Two coats of black enamel baked on.

No. 141. Gas search-light for large trucks. Body of one-piece steel, all parts well riveted, no solder, two coats of black enamel baked on. Mirror is 6 in. in diam. Bracket of swivel type, permitting lamp to be thrown in any direction. Reflector in door, bevel type. The door diameter is 10 in., height 17½ in.

No. 507. For small-sized trucks. A high-grade head lamp, fitted with highly polished reflector, silver plated. Finish, all black or olive drab. Diameter of glass, 6⅝ in.

No. 162-163. An electric search-light for large trucks and very useful for unloading at unlighted platforms and on dark roads. Door octagon, held in place by Victor push-button lock. Heavy silver-plated reflector. Outside type. Bulbs 21 c. p., 6-8 v. Diameter No. 162 10 in., extreme height, 17½ in. Diameter 163, 11 in., extreme height, 18½ in.

No. 600. For medium size trucks. Reflector, parabola shape, silver plated, cord gasket, making lamp dust and rattle-proof. Diam. 9 in., prop center 7 in. Bulb 21 c. p., 6-8 v. Body drawn from one piece of steel, two coats of black enamel.

Victor No. 507

Victor Gas No. 141

Victor No. 162-163

Victor No. 403

Victor No. 600

(Advertisement)

magneto, thus eliminating short-circuiting.

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WISCONSIN MOTOR MFG. CO.

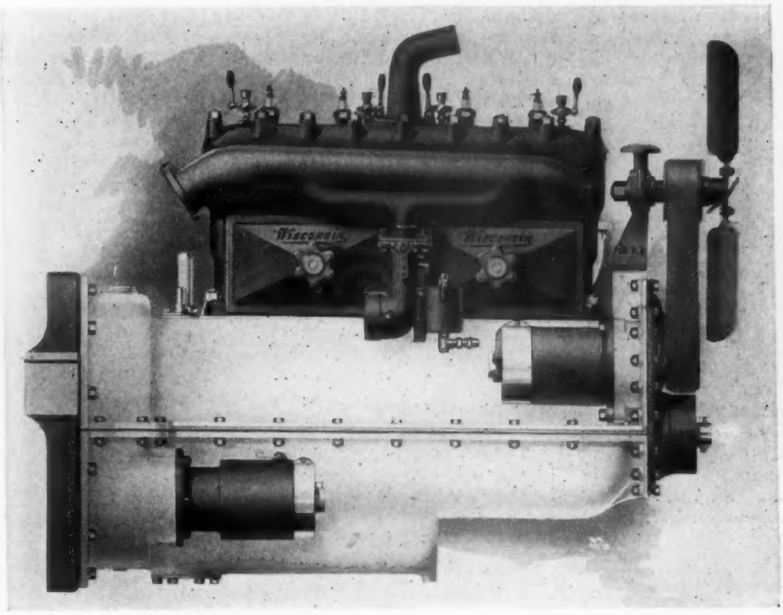


EXHIBIT shows a Wisconsin model VAU 4½" x 6" engine. On the same crankcase both 4" and 4¼" cylinders may be mounted, thus giving a very desirable interchangeability. Both upper and lower crankcase are of aluminum, making the engine very light in weight.

Engine is equipped with all-steel supports; Chrome-nickel crankshaft; removable cylinder head; all bearings extra large; bronze backed, lined with babbitt metal; exhaust valves are of tungsten steel; valve stems and tappets automatically lubricated from crank chamber; force-feed lubrication throughout. Provision is made for standard S. A. E. starter and generator mounting.

All work on the Wisconsin engines is most accurate and a rigid inspection is enforced.

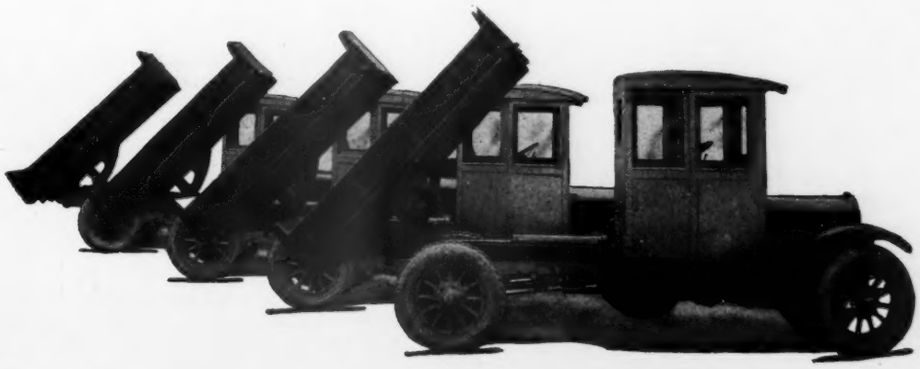
WOOD-DETROIT HYDRAULIC HOIST & BODY CO.

THE exhibit shows trucks equipped with the latest addition to the Wood-Detroit line of hydraulic hoists—the new Wood Underbody.

This hoist was developed to meet a strong demand for a unit that is speedy, powerful, light, and does not take from the body space.

The Wood-Detroit Underbody Hoist mounts in the frame below the body floor. In operation, the rollers are forced back under cams, elevating the body to an unusually great angle. The long stroke of the hoist keeps the pressure down. This hoist is particularly well adapted to trucks used in general hauling work, as a body of maximum dimensions can be used. The truck can be used for any load, yet when power-dumping is desired, the Underbody is ready for instant use.

This new Wood-Detroit product is made in three sizes: for Ford trucks, for speed wagons and for one-ton trucks. With these models, two sizes of vertical hoists and three of horizontal, the Wood-Detroit line serves every need.

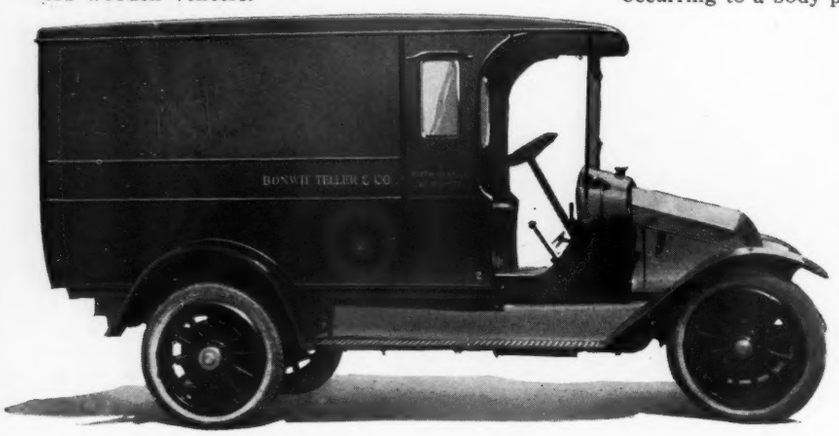


(Advertisement)

1922 MOTOR TRUCK SHOW

THE PANTASOTE CO.

THE PANTASOTE COMPANY is meeting with great success in the sale of its Vehisote wood-fiber panels for bodies of commercial cars. Originally Vehisote was produced for interior trim in steel railroad cars and it has been adopted by practically all of the steam and electric railroads for head-linings in the upper and lower decks of cars, displacing for those purposes the old wooden veneers.



Vehisote for panels of commercial car bodies is quite as successful in this field as it has been in the railroad field. In the first place, steel is a conductor of both cold and heat, and bodies built of assembled steel are prone to rattle and work loose. Then again, if a collision occurs and a steel panel is run into by the pole of another vehicle, the entire panel is probably ruined, whereas, the same accident occurring to a body paneled with Vehisote is easily repaired by cutting out the damaged spot and fitting in another piece of Vehisote.

Vehisote takes a beautiful finish without having the appearance of waves so apt to occur in finished steel panels. The manufacturers of the highest-priced and best commercial car bodies are recommending Vehisote to their customers and are using it with the knowledge that in so doing they are giving their customers jobs which will render the greatest possible service over the longest period of time.

Continental Motors Corp.

QUALITY of a degree that can be attained only by skill and effort, concentrated for years upon a single objective.

Performance that represents twenty years of motor-building experience and refinement.

Design of a soundness and a simplicity that are expressive of proven mechanical principles, uncompromised by radical and untried experiments.

Economy of maintenance that is founded on built-in efficiency, achieved by years of patient endeavor and backed by a world-wide system of parts stations.

Stability of manufacturing parentage that obviates the disadvantages of owning "orphan" equipment, thereby insuring a fair resale value.

Confidence that is inspired by the Continental guarantee, thorough manufacturing methods, demonstrated performance, nation-wide good-will, and the reputation and prestige of that very highly respected trade-mark the Continental Red Seal.

Hydraulic Hoist Mfg. Co.

THIS exhibit shows the St. Paul vertical type hydraulic hoist. An underbody hoist is also offered in the St. Paul line.

Material and workmanship are of the best. Simplicity of design and mechanism is said not only to reduce to a minimum care and repairs, but to insure dependable and rapid operation. Each hoist is especially designed to fit the truck for which it is intended. A power take-off is supplied, without extra charge.

No subframe is used in mounting the underbody type of hoist, nor is it necessary to purchase extra parts for its installation. This model is also supplied with a latest model power take-off.

Another product of this company is what is known as Superior steel bodies. They are constructed of 8 gage steel and provided with double-acting tailgates.

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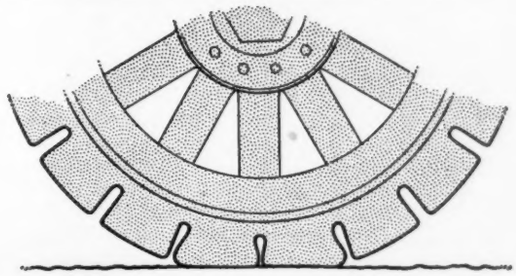
1922 MOTOR TRUCK SHOW

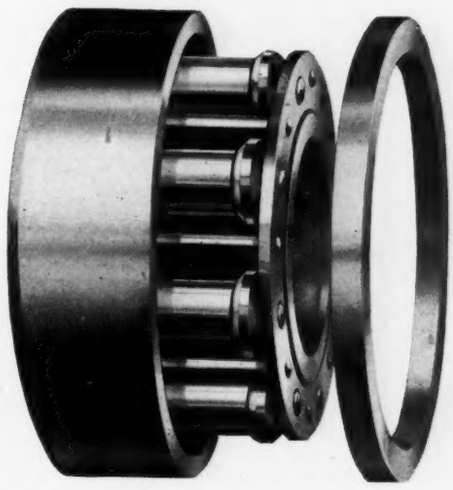
Kelly-Springfield Tire Co.



RUBBER cannot be compressed; it can only be replaced or made to flow. Therefore, in order to properly cushion shocks, adequate space must be provided into which any section of the tire under load may be forced. The special notch or side vent construction of the Caterpillar tire, as shown in the accompanying drawing, permits each section of rubber bounded by these notches to expand or flow when subjected to pressure. This causes the notches to close and localizes the stresses and strains of the stretched rubber. These notches, furthermore, serve to prevent skidding and slipping of the wheels. The area of contact is especially effective, because it occurs directly under the load and does not include any portion of the usual destructive traction wave—which is nothing but a bulge in front of, and behind the point of contact, caused by the flattening of the rubber and its inability, in the ordinary type of solid tire, to flow into any displacement notch.

The Caterpillar tire is made in all sizes for trucks varying from one-ton to ten-tons capacity.

Bower Roller Bearing Co.



THIS BOWER ROLLER BEARING is made expressly for motor truck and bus service and meets the demand for a bearing of high-carrying capacity, taking thrust in both directions. Like all Bower bearings, it does not require adjustment.

The Russell Manufacturing Co.

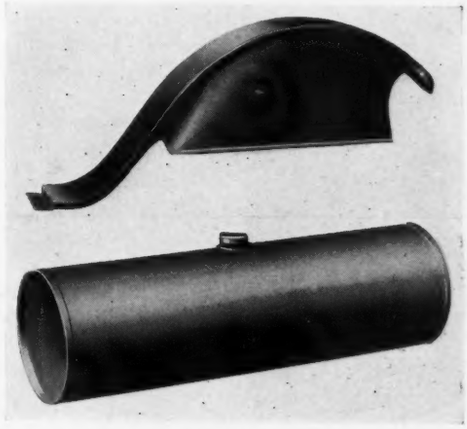
THIS company makes Rusco Brake Lining and Rusco Clutch Facings in sizes suitable for the extra-heavy wear given them by trucks.

Rusco Brake Lining is 90% asbestos and brass wire and Rusco Clutch Facings are 100% asbestos and brass wire. Both are compressed so that more material in the same space gives greater wear.

When a passenger car is out of commission for a day or two, while new brake lining or clutch facings are being put in, no great loss is felt, but with a truck, lost time is money lost, too.

Rusco products are built to make reinstallations come a fewer number of times in a given length of time.

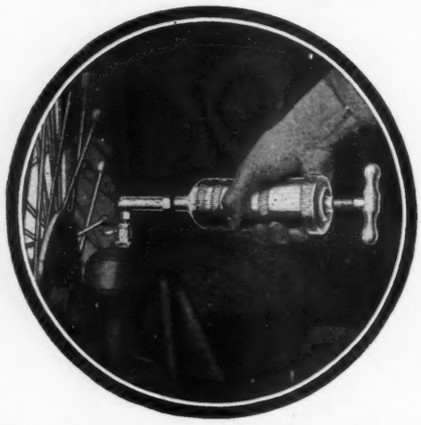
YORK CORRUGATING CO.



THIS exhibit shows samples of the metal stamping and sheet metal work made by the York Corrugating Co., of York, Pa. This concern recently installed a number of new presses and other special machinery to do all kinds of work requiring special stampings. It is adequately equipped to give prompt service on all kinds of sheet metal work for motor trucks, tractors and passenger cars. The products in which this concern specializes include hoods, fenders, gasoline tanks, radiator shields, running-board shields, tool boxes, radiator shells, hood sills, sod pans, etc.

1922 MOTOR TRUCK SHOW

BOWEN PRODUCTS CORP.



THE feature of one-hand operation is one of the desirable characteristics of the Empress High-pressure Lubricating System exhibited above. Inaccessible points when lubricating are brought near, and the performance of lubricating is rendered simple.

The company states that because of the sturdy, mechanical and practical construction of this system, a positive, quick, easy and clean method of lubricating any truck or truck unit is afforded.

One-hand operation; effectively accommodates all grades of grease and oil; convenient to handle; easy to operate; cleans and lubricates; and with it an entire chassis can be lubricated with dispatch.

THE SPRING PERCH CO.

EXPERTS in leaf spring suspension offer their facilities to engineers and designers. They are specialists in designing compound springs for bus service; resilient springs for speed wagons; banded springs for commercial trucks. This company recommends its springs especially where Hotchkiss drive is employed. All made from rigidly tested alloy steels.

Joseph Dixon Crucible Co.

DIXON'S GEAR LUBRICANT No. 677 is a light-bodied lubricant whose consistency remains unchanged through a wide range of temperature. It is recommended for transmission and differential gears; except worm drives, where Dixon's No. 675 should be used.

No. 677 flows freely over the gears when in operation, yet it will not squeeze out under heavy load nor run off the gears when idle.

It resists cold, permitting gears to shift as easily in freezing weather as in mid-summer, and it shows minimum power losses in hot and cold weather operation.

Dixon's Worm Gear Oil No. 675 is a heavy oil, prepared for worm-drive lubrication. It is of the same high quality as No. 677 and has the same essential lubricating properties.

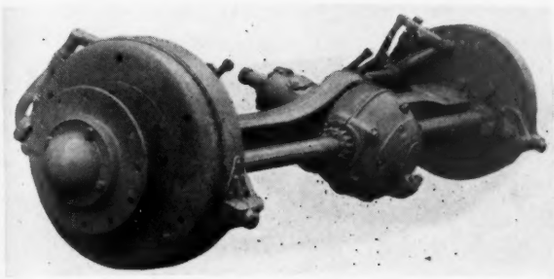
CHAS. D. SCHMIDT CO.

SCHMIDT MOTOR TRUCK TRACTION DEVICES can be formed into three different devices, permitting three positions of wear. In other words, the chain is so constructed that all parts of the chain can be subjected to wear. The illustration shows the chain attached in what is known as the semi-floating, semi-anchored position. The ring on the side of the wheel around the hub prevents hooks creeping to the tire tread. If chain breaks at tread, the side ring will hold the pieces but throw them to the outside of the gear, away from the running gear.

(Advertisement)

1922 MOTOR TRUCK SHOW

THE TORBENSEN AXLE CO.



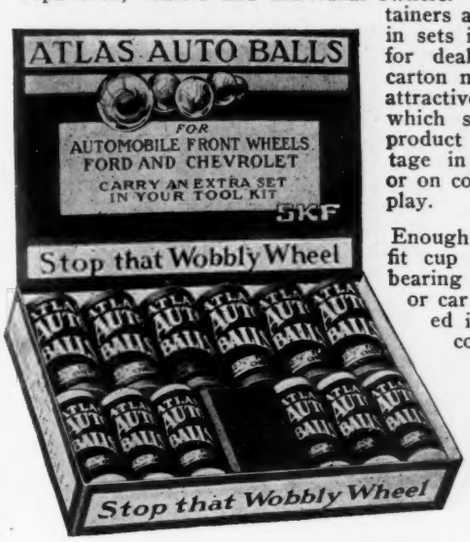
THIS exhibit shows the Torbensen internal gear type of rear axle, having a carrying capacity of 2700 pounds on the spring pads, designed for use on speed wagons.

It has the following advantages: lightness in weight consistent with strength, minimum of unsprung weight, maximum efficiency, economy of operation, high road clearance and accessibility. Lightness in axle weight means a minimum amount of unsprung weight, which in turn means economy in tire wear and reduction in cost of operation.

All working parts are enclosed. They are fully protected from dust, dirt and mud and simply lubricated. These facts and the rugged, simple Torbensen patented construction account for this axle's freedom from mechanical trouble.

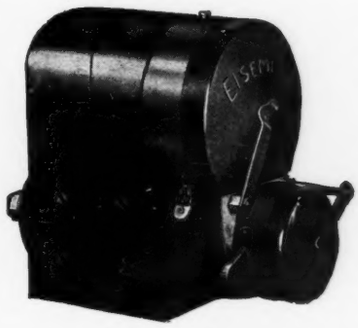
SKF INDUSTRIES, INC.

THE ATLAS BALL CO., Phila., Pa., subsidiary of the SKF Industries, Inc., is now making another progressive step by placing on the market Atlas Auto Balls in the most convenient form for repairmen, dealers and individual owners. The containers are packed in sets in cartons for dealers, each carton making an attractive package which shows the product to advantage in windows or on counter display.



Enough balls to fit cup and cone bearing of a truck or car are packed in wooden container.

The Eisemann Magneto Corp.



THIS exhibit shows the Eisemann Type G-4 magneto, designed especially for motor-truck service. It is absolutely waterproof and dustproof and it is also constructed with a unit-cast housing.

The Eisemann Magneto Corporation manufactures magnetos for all types of electrically ignited internal combustion engines—truck, tractor, passenger car, marine, stationary, industrial, mine locomotive.

THE GILLIAM MFG. CO.

GILLIAM TAPERED ROLLER BEARINGS are distinguished by their clean, smooth, finished appearance, and also by the concave ends of the rollers.

The simple, heavy, one-piece steel-stamped cage is free from troublesome flanges and riveted joints.

The use of the maximum number of the largest rollers possible which have carrying capacities over their entire length, adds greatly to the strength of bearings.

Only properly and carefully heat-treated Alloy Steels are used throughout the construction of these bearings.

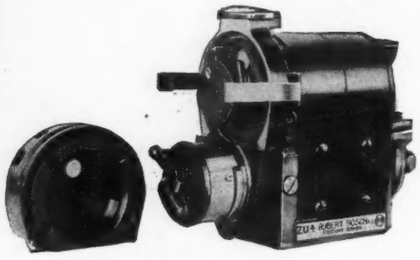
(Advertisement)

1922 MOTOR TRUCK SHOW

Robert Bosch Magneto Co.

ON the left is shown the new Robert Bosch Spark Plug, which is of two-piece design, facilitating cleaning. It is constructed on the valve-seat principle, making it absolutely gas tight. Insulator is made of "Steatite," which is unaffected by heat and is unbreakable under ordinary usage. This company also makes a one-piece plug constructed of same materials as the two-piece plug, the only difference being that it cannot be taken apart.

Below is illustrated the Robert Bosch type ZU-4 magneto with distributor disc removed. This magneto is one of the popular types which this company manufactures, and which is recommended especially for truck and tractor use. All Robert Bosch magnetos are now of the enclosed construction, making them dust and waterproof.



UNITED STATES RUBBER CO.

MONO-TWIN is a principle—not merely a design. Heat, radiation, traction, uniform curing and load-carrying ability—these are Mono-Twin features not adequately provided by the conventional solid tire.

HAYES MFG. COMPANY

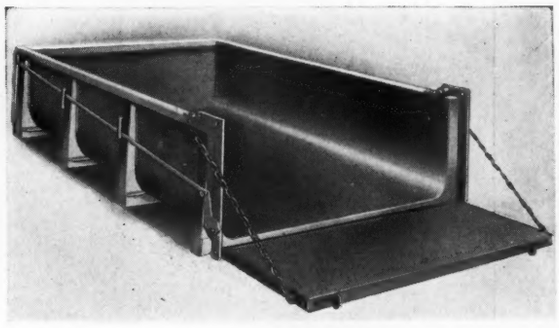
The Hayes All-Metal Cab

A BETTER CAB for motor trucks. They are built of steel. The front pillars are designed to give a maximum of vision.

Has ventilating windshield and sliding doors, which can be locked open or shut.

Will give perfect protection to the driver in all sorts of weather and will last the life of the truck.

THE HUGHES-KEENAN CO.



The Round-Cornered Type of Combination Dump-Express Body, Showing End Gate in Open Express Bodies

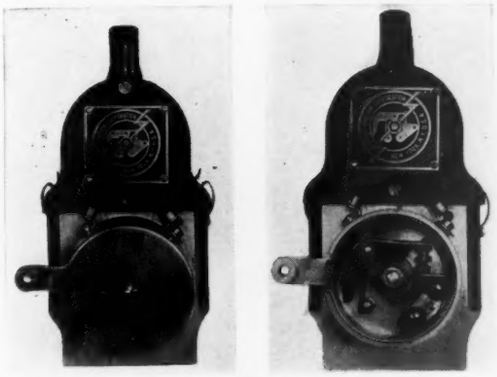
THE HUGHES-KEENAN COMBINATION DUMP EXPRESS BODIES are offered in many types, in every desired size and for every chassis at prices remarkably low.

A new Hughes-Keenan Hand Hoist of unusual efficiency, offered at an astonishingly low price, is a 1922 addition to the Hughes-Keenan line.

(Advertisement)

1922 MOTOR TRUCK SHOW

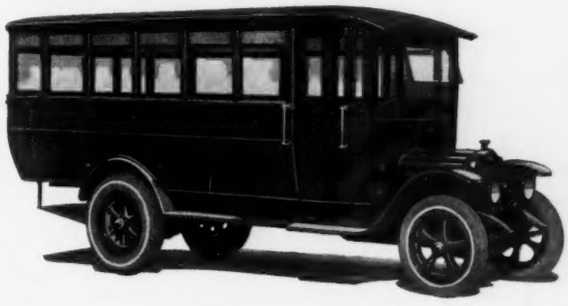
PAQUIT IGNITION CORP.



Two Views of the Paquito Battery Ignition System and Showing Magneto Type of Breaker

THE PAQUITO BATTERY IGNITION SYSTEM with standard magneto base, is now equipped with a new breaker which can be easily displaced by hand and cleaning of contact points, etc., can be accomplished with breaker off the unit. The Paquito operates on any voltage and draws but 1/10 ampere; has but one rotating part; is water and dust-proof and is made in four and six-cylinder types. Vertical units, including a type for the 7-R Continental engine are offered the trade. The Paquit Ignition Corporation, 1819 Broadway, New York City, will shortly bring out a patented contact gap adjusting device which has many interesting features.

McKAY CARRIAGE CO.

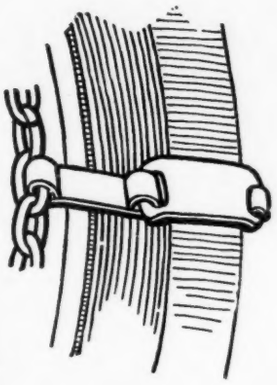


THE above exhibit, which is of the cross-seat street-car type, is one of a line of bus bodies taking in every known and approved style of the day. With the advent of good roads and the increasing utility of the bus to the traveling public, the McKay Carriage Company, Grove City, Pa., commenced specialized quantity production on bus bodies designed for comfort and easy riding. The line consists of four bus types and two school bus types in various styles and dimensions for mounting on any standard make chassis and can accommodate from ten to fifty passengers.

The general construction in all types is practically the same with the full swell sides and rear, with a wooden wheel-house made to fit over wheels and fenders. This design not only results in a neater job, but brings the body down lower on the chassis, giving more room on the inside.

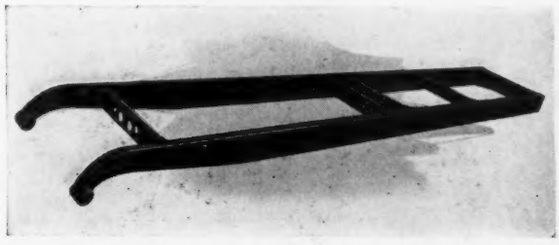
Woodworth Specialties Co.

THE WOODWORTH TIRE CHAINS, made by the Woodworth Specialties Co., of Binghampton, N. Y., have the gripping members on the middle of the tire especially designed to prevent bumping and take the best possible hold on the road. These gripping members are made comparatively thin, but are from 1" to 2" wide, and rounded next to the tire. They are held in such a way that in ordinary running they lie flat on the tire, but when the wheel begins to spin the pull on the rear edge tips up the cross member so that it stands out edgewise on the tire and takes a very deep hold in mud or snow. It is also designed in such a way that the edges will grip in ice.



On account of the rounded surface they are very easy on the tire and they give very long wear. They are made for all types of tires and are made both in the Easyon type or single chain to fasten to the spoke, and in the side chain or creeping type.

Sharon Pressed Steel Co.



THIS company is producing a complete line of pressed-steel motor truck and passenger car frames, brake drums, clutch disks, step hangers, torque arms and other heavy pressed-steel automotive specialties. It reports its factory operating at about 50% normal capacity, with a steady increase in volume of business. An interesting achievement of this company is here illustrated. The six-wheel motor bus, operated on regular schedule by the Goodyear Tire and Rubber Company, for carrying its employe:, is mounted on a Sharon frame, and has, at times, handled loads of 110 passengers. The bare frame illustrated is probably the largest truck frame ever made, built for the American Steam Truck. It is 37 inches wide and measures 255 inches in length. The dimensions of the cross-members front to back are as follows: 5 x 2½; 6 x 2½; 6 x 2½; 5 x 2½; and 8½ x 2½. The frame weighs 690 lbs. The Sharon Company was reorganized and refinanced early in 1921, and under new management has made steady progress with the new shop equipment, new methods, and a picked personnel.

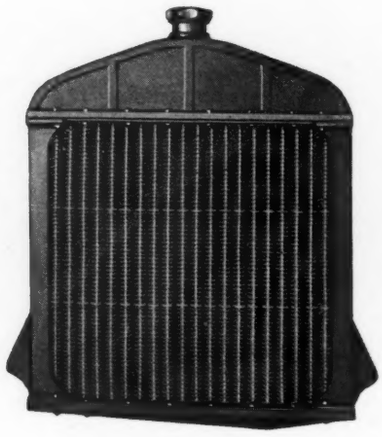
(Advertisement)

1922 MOTOR TRUCK SHOW

THE NORMA CO. OF AMERICA

THE NORMA COMPANY OF AMERICA, Long Island City, N. Y., reports an increasing use of the open or separable type of ball bearing as represented by the Norma Precision Ball Bearing. For years past, this company has concentrated on the production of this bearing—its specialization resulting in production methods making possible the maintenance of the most extreme precision of dimensions, concentricity within the minimum limits, and extremely high finish. One result of this is that Norma bearings —size for size—are absolutely interchangeable, part by part. Manufacturers of high-grade, high-speed apparatus have long recognized the advantages of these Norma qualities, as is evidenced by the fact that Norma bearings are internationally recognized as standard in the better grades of magnetos, lighting generators and starting motors. Norma precision assures that silent, vibrationless, friction-free running so essential in high-speed work, while the Norma open type facilitates machining and assembling, as well as making inspection and cleaning easy.

THE G & O MFG. CO.



MANUFACTURERS of high-grade radiators for light and heavy duty, in diagonal honeycomb, round and square fin tubular, and the new multi-tubular core.

DAYTON STEEL FOUNDRY CO.

DAYTON STEEL TRUCK WHEELS are now standard equipment on all the leading makes of motor trucks—and their popularity continues to grow rapidly, year by year. They are proven correct as to their principle of construction, following the best engineering practices and standards. They combine strength with light weight, pleasing appearance and wonderful resiliency. Their manufacturers make for them the claim that they save tires, in addition to their many other advantages.

THE PISTON RING CO.

THESE rings are designed for use in motor trucks, automobiles, motorcycles, marine and aero motors; oil and steam engines; pumps, air and ammonia compressors.

Each ring is individually cast from a special formula of close-grained, tough, grey iron, carefully analyzed and kept a few points softer than the proper quality of cylinder metal. Long-lived, quick to seat, easy to install and extremely accurate, quality piston rings have naturally become a part of the world's finest-built motors. They are furnished in all standard sizes and oversizes and wrapped in waxed paper for shipment in attractive boxes.

(Advertisement)

(Advertisement)

1922 MOTOR TRUCK SHOW

American Malleable Cast. Assn.

THIS hub of certified malleable is here shown to demonstrate the abuse this material will stand. Two sections have been sawed out and bent cold through an angle of over ninety degrees without fracture. Many of the properties of certified malleable are here displayed. Great strength and ductility are demonstrated by the wide angle of bending; shock resistence, by the ability to stand repeated blows without fracture; excellent machining qualities, by the even tool marks on the flanges, the perfectly turned threads and clean drill holes; uniformity of structure, by the clean, cross section of metal.

Certified malleables are made by those foundries whose product and plant practice have regularly met the requirements of the Association.

BUSH MANUFACTURING CO.

THE BUSH MANUFACTURING CO., of Hartford, Conn., manufacturers of Bush radiators have conducted experiments in their plant, and under service, which have proven to them that their type of radiator construction cannot be excelled.

They have specialized in every branch of automotive cooling; truck, tractor, aeroplane, and passenger car, and have developed their product to the highest degree of efficiency.

Careful attention to every detail of construction, strength in each integral part, the desirable quality of providing generous radiation, and the inherent ability to absorb shocks and stand up under excessive abuses, have brought Bush radiators to the attention of the foremost manufacturers of automotive equipment in the country.

BETHLEHEM STEEL CO.

THE above exhibit shows the Bethlehem Rolled Steel Truck Wheel, which is manufactured from a specially rolled, wide-flanged steel I-beam by a series of punching and bending operations. The spokes are formed from the web of the beam and are brought together at the hub in an interlocking "keystone" hub construction. The felloe is formed from the flange, which is electrically welded. The result is a one-piece unit, strong and durable, and at the same time possessing resiliency and light weight due to the use of rolled steel in its construction.

H. H. BABCOCK COMPANY

MODEL J Vestibule Cab—for year-'round service; steel front set in angle steel pillars absorbs the twist and weave of chassis frame; special adjustable seat raises and lowers, slides forward and backward to accommodate driver; upholstered spring cushion and special spring back; windshield—steel frame, hung on universal joints to avoid breakage—can be opened to any angle or flattened against roof. Special lever cams hold the windshield solid in any position and secure a water-tight front when closed. Rain-vision section on driver's side operates individually. Built in two sizes; dimensions 46" long by 53" and 60" wide.

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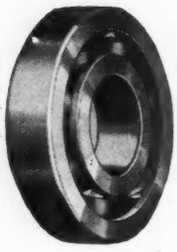
1922 MOTOR TRUCK SHOW

U.S. BALL BEARING MFG. CO.



THIS exhibit illustrates the Strom Ball Bearing, which is designed to carry unusually heavy loads. These bearings are made with deep-seated raceways and large balls, giving long and satisfactory service in motor trucks.

This company manufactures a complete line of radial, thrust and angular contact bearings in all sizes and types to exactly meet all requirements of the truck or unit manufacturer.

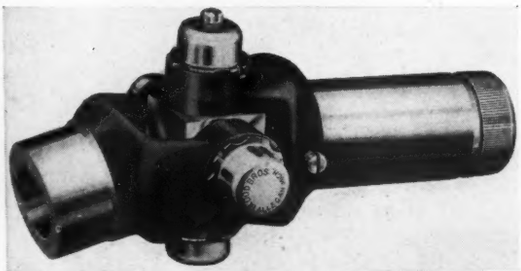
U.S. Hammered Piston Ring Co.

AN extensive sales campaign, coupled with a broad national advertising campaign, has been inaugurated to secure distribution for the U. S. Hammered Piston Ring, made in Irvington, N. J.

A. W. Wenzel, president and general manager of the company, is one of the pioneers of piston-ring manufacture in this country and has successfully promoted two other very prominent piston rings. The U. S. Hammered Piston Ring is now used as standard equipment by Winton, Kissel, Stearns, Cunningham, Peerless, Mercer, and Stevens-Duryea.

The rings will be marketed on a jobber policy under the sales supervision of John L. Barnes, formerly assistant advertising manager of the Splitdorf Electrical Company. Mr. Barnes has recently been elected secretary of U. S. Hammered Piston ton Ring Company. Inquiries for jobber and distributor propositions are welcomed.

Blood-Brothers Machine Co.



MODEL B JOINT, illustrated above, is lubricated through a single opening. It lubricates with oil or grease. It has rendered uniformly satisfactory service the past two years on over twenty-five leading trucks and tractors.

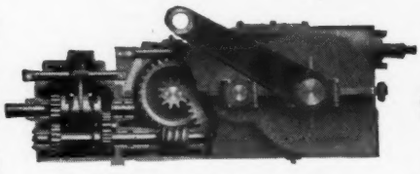
Briefly, the cross pins are hollow, permitting the lubrication of the entire joint through a single opening. All four bearings are fed by centrifugal and capillary action. The joint is built to retain heavy oil or soft cup grease.

The Model B joints and propeller shaft assemblies are made in four sizes covering the entire range of truck and tractor requirements.

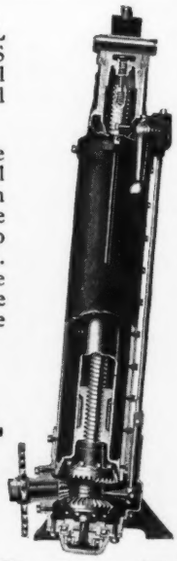
The Van Dorn Iron Works Co.

VAN DORN MECHANICAL DUMP TRUCK BODY HOISTS are built in vertical and horizontal models to fit every design of truck and power take-off.

The vertical model is operated by the screw-jack principle. The horizontal model operates through series of worm and spur gears. The body may be elevated to any dumping angle up to 45°, and stopped, locked or lowered. The hoists stop automatically when the body is raised to the 45° angle. The truck can be driving away when the body settles to its bed.



Cutaway view of the Van Dorn Horizontal Hoist. A positive connection between hoist and body is made by a link and lift arm to secure a 45° dumping height and permit a compact folding of the arms under the frame.



The cutaway view shows the screw-jack principle of operation of the Van Dorn Vertical Hoist. Top top cutaway section shows the automatic lubricating device.

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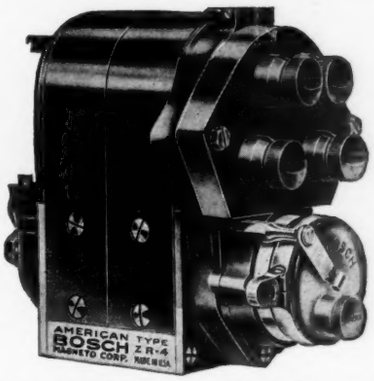
1922 MOTOR TRUCK SHOW

AMERICAN BOSCH



AMERICAN BOSCH MAGNETOS are made for use as a source of ignition on truck and all other internal combustion engines which use an electric spark to fire the mixture. They are manufactured by the American Bosch Magneto Corporation, with main office and works at Springfield, Mass., and branches at New York, Chicago, Detroit and San Francisco.

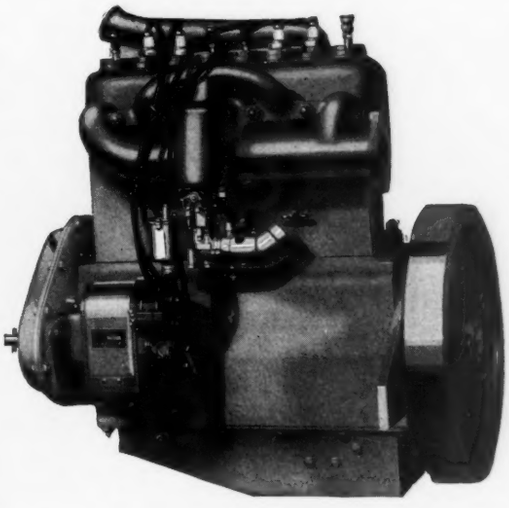
Bosch magnetos are noted for their dependability and efficiency. They are economical, too, because they furnish a very hot spark, which ignites a lean mixture regularly, making a powerful, smooth-running motor with no misfiring and little wear on the bearings. Besides magnetos, the company manufactures a high-quality line of automobile starting and lighting equipment, battery ignition systems, spark plugs, impulse couplings, and other automotive accessories.

THE HEIL COMPANY

AMONG the most recent Heil developments are the combination dump body for contractor service, road-building equipment for short wheelbase trucks, special high-lift equipment and the Hydro hoist. In keeping with the readjusting activities of the times, this company has been one of the first to reduce its body prices, which became effective on December 1, 1921.

The exhibit above is Heil equipment featuring a patented device that permits of simple and effective swinging partition use. Swinging partitions make it possible to handle road-making material; i.e. aggregates in batches or mixes. They also make it possible to carry several orders of coal at one time.

Turner & Moore Mfg. Co.



The Model N Turmo, the Smallest "Turmo" Engine. Made in Three Other Sizes

Morand Cushion Wheel Co.

MORAND CUSHION WHEELS produce the ideal condition for truck users. They permit the use of solid tires, which means low tire cost; their cushion elements reduce repair and maintenance cost to a minimum. Made in two types. Morand Standard Wheels are complete units that replace truck wheels of any standard make. Morand Demountable Elements are interchangeable with, and replace any S. A. E. pneumatic without wheel change.

(Advertisement)

1922 MOTOR TRUCK SHOW

S. F. BOWSER & CO.

SERVICE to the customer, coupled with profit to the filling station are the two prime features of dispensing gasoline through the Bowser Piston-Type Measuring Pump. This company's idea in the designing of this pump was to incorporate in it all the qualities making for increased patronage and consequently greater profits for the dealer. The result of this effort on the part of the engineers is a pump combining attractive appearance, accuracy, visibility, cleanliness and speed.

It is pointed out that as much as twenty gallons of clean gasoline can be pumped into the reservoir of a truck in a minute's time. A patented centrifugal separator removes every particle of water that may exist in the gasoline.

Another constructional feature is that the volatile gases cannot escape from Bowser-served gasoline. This is accomplished by the method in which the gasoline is pumped into the gas tank, without agitation and without exposure to the air.

This company also recently raised the industry's progress a notch by introducing a commercially valuable innovation for the conversion of used oil into a high-grade motor lubricant. It is known as the Bowser Oil Reclaiming Outfit and its use entails but two simple operations. The dilution is driven out by the action of steam and the foreign matter: grit, dirt, worn away motor parts, etc., are removed through precipitation. The plant can be operated at a comparatively small cost.

RUSSEL MOTOR AXLE CO.

THE above is the ¾ ton model of Russel's line of bevel-gear rear axles. It is designed for high-speed work and is capable of withstanding the severe service demanded in speed-truck service.

The brake drums are large and are fitted with internal expanding and external contracting brakes. The housing is of pressed steel, reinforced with a heat-treated, chrome-nickel tube of 7/32 in. wall, extending from the wheel bearing to within 7 in. of the axle center. In addition to being electric welded, the web in the housing is riveted, and the bolts used to secure the third member extend through and are threaded into the housing. The cover is so designed to make for a very rigid center construction.

The semi-floating type of axle-shaft mounting is used, the outer bearing being a double row N. D. No. 310.

The Russel Company builds a complete line of internal and bevel-drive rear axles. The Russel Internal Gear Axle is the only axle built with spiral-bevel drive.

SPICER MFG. CO.

THE well-known slip-joint type Spicer Universal Joint with splined-end propeller shaft. Made in various sizes to suit all requirements.

Westinghouse Electric Mfg. Co.

THIS company calls particular attention at this time to its service on its starting, lighting and ignition equipment.

Two hundred and fifty branch service stations, in cities throughout the country are always ready to extend Westinghouse service to the truck after it is purchased.

(Advertisement)

(Advertisement)

1922 MOTOR TRUCK SHOW

MATHER SPRING CO.

MATHER SPRINGS are used in high-grade trucks because of their standard quality.

THE MACK CORPORATION

A COMPLETE line of worm-drive axles from ¾ ton for speed wagon service to a rugged 2 ton axle for truck work, is being broukht out by the Mack Corporation.

This axle is of the semi-floating type, with a cast one-piece housing, the brake spiders being bolted rigidly to flanged ends of the housing proper.

All driving mechanism is carried by the combined worm gear and differential carrier and when assembled forms a complete unit which may be removed intact from the housing for inspection or adjustment.

All thrust surfaces have been designed with a liberal factor of safety, thereby guarding against any possible wear developing from the repeated road shocks to which all truck axles are subjected.

Following are specifications on Mack 1½ ton and 2 ton axles:

One and a Half Ton

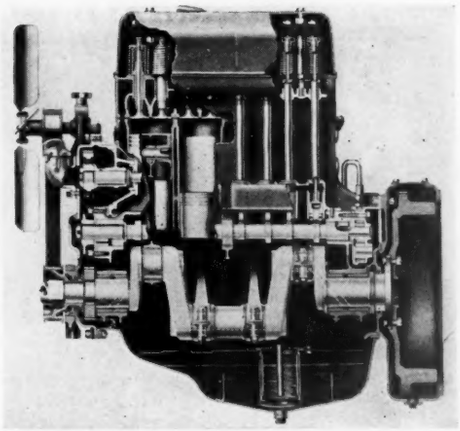
Weight complete with hubs, etc.	455lb
Tread	57"
Gear reduction standard	7¾ to 1
Spring centers	37" to 40"
Width of springs	2½"
Worm Shaft	S. A. E. 1⅜" taper

Two-Ton

Weight, complete	542lb
Tread	57"
Gear reduction standard	8¾ to 1
Spring centers	37" to 39"
Width of springs	3"
Worm shaft	S. A. E. 1½" taper

The Mack Corporation specializes particularly on worm axles for special work requiring special tread, spring centers and gear reduction. All parts of Mack axles are built in their factory.

MIDWEST ENGINE CO.



SECTIONAL view of the Midwest Engine, Model 409, 3¼ x 4½. Special features: Large diameter crankshaft (2¼") eliminates "whipping"; vacuum lubrication control system. A large by-pass valve, connected to the gasoline intake manifold by a copper tube automatically controls lubrication, thus regulating the amount of oil passing through the bearings directly in proportion to the load at any given moment and not the engine speed. By delivering oil under pressure with regard to the load absolutely eliminates under-lubrication or over-oiling as condition of speed and load change. No oil grooves or shims are used.

HOLSTEIN MFG. CO.

THE construction of the Holstein Hand Pump is said to be such as to make for durability and efficiency as well as ease of operation. The damage of underinflating through laziness of driver is claimed to be materially reduced because the enormous capacity of this pump removes the driver's only objection to inflating a truck pneumatic tire with a hand pump—hard work. The natural tendency of an uninterested driver to wait until he gets to a free-air station to inflate a tire that needs air, is practically eliminated, because it is an easy matter to inflate even the biggest of truck pneumatics with this pump.

The Holstein Hand Pump is 22 in. long and 1⅞ in. diam., outside measurement. Adjustability of the handle to any height convenient to the operator is another feature of this pump.

(Advertisement)

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1922 MOTOR TRUCK SHOW

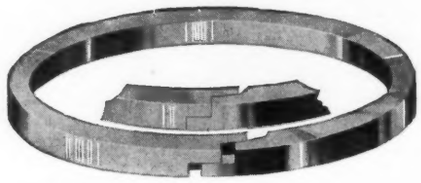
COLUMBIA AXLE CO.

THIS concern manufactures a complete line of single-reduction bevel-gear, rear axles. They are not only constructed with a wide margin of durability and safety to anticipate gross overloading and careless driving on the part of owner, but also to withstand the severe duty required of them in speed-truck service.

They are built with a one-piece housing, which is pressed from a single piece of steel and welded only once. This construction, it is claimed adds unusual torsional strength.

Of the other pre-eminent characteristics, the extra-large ring gears, driving shafts and brake drums are the most conspicuous.

GILL MANUFACTURING CO.



THE GILL RING will be exhibited in booth No. 159 at the Chicago Show and visitors will be welcome there as well as at the Chicago branch office, at 2131 Michigan Ave. Any out-of-town visitors who are interested in the Gill Ring should make arrangements at the booth to be taken to the Gill factory, where an opportunity will be afforded to study the care and attention which is given to the manufacture of the Gill Pison Ring in each of its twelve operations. The Gill Company reports a very successful year for 1921 and anticipates a further improvement in their already well-established business during current year.

BEARING SERVICE CO.

THIS company was organized to act as the official service station for Timken, Hyatt and New Departure bearings.

A complete stock of bearings is carried in each of the thirty-two branches and approximately one thousand distributing points throughout the country. This stock includes bearings for trucks, tractors and passenger cars.

FLINT MOTOR AXLE CO.

THIS company has specialized in the manufacture of front axles, from ½ ton to 2 tons capacity for the past ten years. The steering knuckles, arms, tie-rod yokes and I-beam centers are of forged steel, heat-treated. The hubs are equipped with Timken roller bearings. The steering balls are of chrome-nickel steel. The tie-rod bolt and king bolts are hardened and ground. This company is especially equipped to handle quality as well as quantity orders promptly.

(Advertisement)

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1922 MOTOR TRUCK SHOW

The Borg & Beck Company

THE HOBBS HEAT INDICATOR, a new product exhibited by this concern, accurately indicates on the dash of a truck, the engine temperature existing in the engine at all times. Its accuracy is claimed not to be affected by cold winds, snow or other exterior conditions. Location on the dash is such as to keep it always visible to the eye, day or night.

The indicating hand on the dial is actuated through a flexible, dental-type shaft by a small but effective thermostat of special design, mounted against the engine block by a special clamp. The actuating unit can be located anywhere on the engine cylinder. Each instrument is simply, quickly and permanently adjusted for running at temperatures of the individual engine at the time of installation.

This instrument is made of quality materials and is fully guaranteed by the manufacturer. List price is $8.50. Built for truck, tractor and passenger car use.

Buckeye Rubber Products Co.

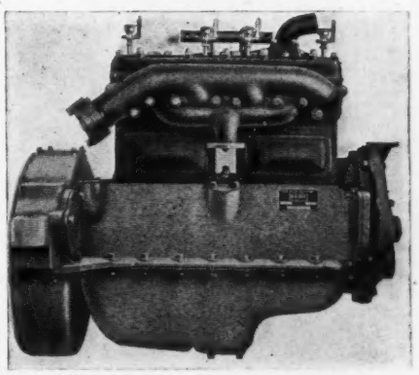
THIS company manufactures the Polack Solid Tyre, in which a number of improvements have been made for 1922. Longer life has been added to the 1922 tire because of the fact that the tread has been increased. More rubber has been added to the tread, thus giving greater cushioning effect.

The compound from which the tire is made has also been improved. The new compound gives increased mileage; reduces chipping, tearing and cracking and produces tougher side walls. Only the purest Para rubber and compounds are used in the manufacture of the Polack Tyre.

Goodyear Tire & Rubber Co.

THE GOODYEAR LINE of truck tires includes the Goodyear Cord Truck Tire, the Goodyear All-weather Tread Solid, and the Goodyear Patented Hollow Center Cushion. This line meets any kind of hauling requirements.

BUDA COMPANY



THIS exhibit shows the Buda Company's latest product, the Buddie speed-truck engine, which has a bore and stroke of 3⅝ x 5⅛ in. respectively. Accessibility features this engine throughout. Although the water pump is standard, the thermo-syphon cooling system may be used if desired. The cylinder head is detachable and the fan bracket is readily accessible. Provision is made for installing lighting and starting equipment; magneto or battery ignition.

Two new models have just been added to the Buda line, designed especially for motor bus service. These will be described in our next issue.

(Advertisement)

1922 MOTOR TRUCK SHOW

Columbian Steel Tank Co.

IN this exhibit this company calls attention to four big units of the truck equipment field: Truck Tanks—partition mounted, lowest mounting, less deadweight; three-point supported; jointless pipe lines with funnel outlets; welded-on bucket box; removable and adjustable side-carrying racks; tank, mounting, pipe lines and bucket box welded into a monometallic unit. Correct Distribution of load on rear axle.

Dump Bodies: Longitudinal sills formed from side and bottom members. All members welded. No rivets in entire assembly. Tail gate hinged top and bottom —double acting, five models.

Hand Hoist: Famous Columbian Lightning Hand Hoist. Narrow and compact in construction. Mounts in 11 inch space.

Power Hoist: Latest big addition to the truck-equipment field. This power hoist is described in our advertisement in this issue.

A. SCHRADERS SON, Inc.

THIS exhibit shows the new Schrader Universal Tire Pressure Gauge for truck tires. This is built with an angle foot permitting the testing of the air pressure by applying the gage to the tire-valve laterally instead of vertically. This is a great convenience in cases where, because of the heavy wheels used, the space between the hub and the felloe is too small to permit the use of the ordinary gage.

With the use of pneumatic tires on heavy trucks becoming more common every day, there is a corresponding increase in the demand for these gages, for if there is need of maintaining adequate and uniform pressure in tires used on passenger automobiles, there is ten times greater need with tires used on heavy commercial cars.

The Schrader Truck Gage retails for $1.75.

BROWN-LIPE

Brown-Lipe Gear
Transmissions
and
Brown-Lipe-Chapin
Differentials
Both at Syracuse, N. Y.

FISK RUBBER CO., OF N. Y.

EXHIBITING the Fisk Flat Tread Cord Truck Tire. This tire is scientifically designed with a real flat tread. The tread is as wide as the rim size—giving 35% more road contact than ordinary truck tires.

Curved sidewall—an entirely new, revolutionizing construction—reduces flexing under load, preventing the straining of the layers of cord and the resulting blow-outs. Immediate deliveries on sizes 34 x 5, 35 x 5, 36 x 6, 38 x 7 and 40 x 8.

(Advertisement)

1922 MOTOR TRUCK SHOW

R. E. DIETZ CO.

DIETZ NEW ELECTRIC HEAD AND TAIL LIGHTS are real truck lamps designed to solve the problems of lighting which are peculiar to motor truck operation. They combine rugged strength, pleasing design, lighting dependability and other desirable features of construction and points of usefulness and are made to sell at a moderate price.

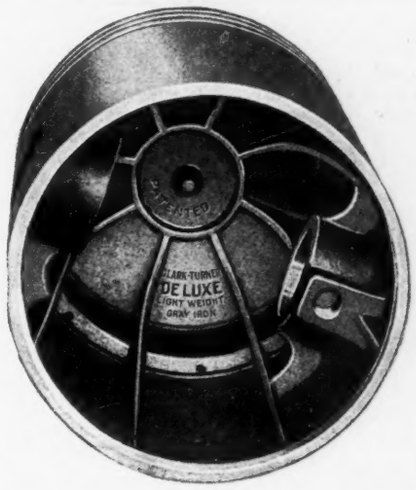
"Sentinel" Headlight

A Dietz "Sentinel" headlight is 7½ in. in diam. It is made in the popular "Drum" shape in one piece from 18 gage, cold-rolled steel. Lens rim, made of the same material, goes on like a collar and is fastened securely by a simple, efficient slot-locking device. This powerful construction causes the lamp to react like a drum against the jolting vibrations of motor and road. The sockets fit round, forked brackets. The reflector is parabolic in shape, non-rusting, and the lens is of the popular "National" anti-glare type. Additional equipment consists of an adjustable focusing connector furnished single or double contact, as desired, complete with metal plug for standard C. P. bulb. "Sentinel" headlights are well finished in baked black enamel outside, with an interior coating of baked white enamel.

"Vigilant" Tail Lamp

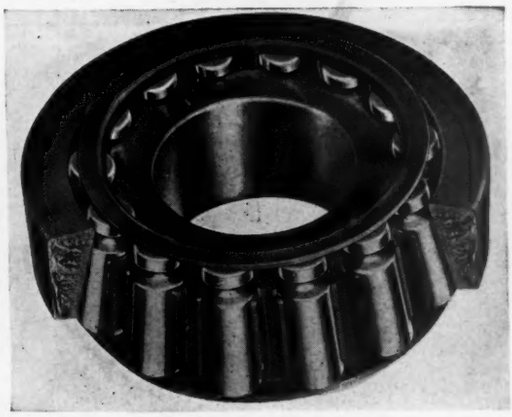
Dietz "Vigilant" Tail Lamp is made of 18 gage cold-rolled steel in one piece. The lamp measures 3¼ in. in diam. and is fitted with a 3 in. ruby lens and a regulation white light to illuminate the license plate. There is also an adjustable focusing connector, furnished single or double contact, as desired, and complete with metal plug and standard C. P. bulb.

Clark-Turner Piston Co., Inc.



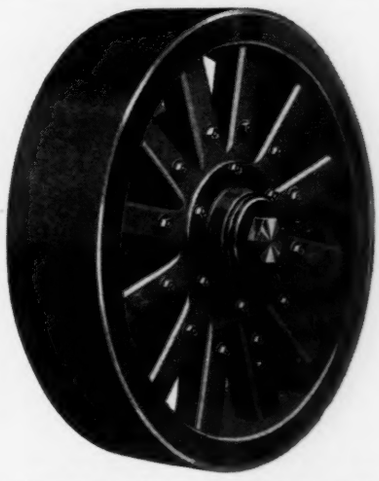
LOOK inside for the scientific reinforcing ribs extending down inside and across the head of the piston to a reinforcing ring, making DELUXE Pistons stronger where strength is needed. This construction also makes DELUXE Pistons 40 to 50 per cent lighter than ordinary stock-factory, cast-iron pistons, eliminating useless metal, permitting much closer fitting, equal expansion—the heat radiating from the ribs and rapidly dissipating.

Timken Roller Bearing Co.



BECAUSE of its superior design and careful manufacture, the Timken bearing is pre-eminent for hard service, giving maximum satisfaction at minimum cost. In automotive vehicles Timken bearings predominate in the applications where requirements are the most difficult. They are used in trucks, passenger cars and tractors for mounting front and rear wheels, differentials, pinion and worm shafts, transmissions and fans. The Timken Roller Bearing Co., manufactures and fabricates its own steel for cups, cones and rolls, and is, therefore, able to dictate exactly and obtain the proper qualities in the raw material to give the best results in the finished product.

Motor Wheel Corporation

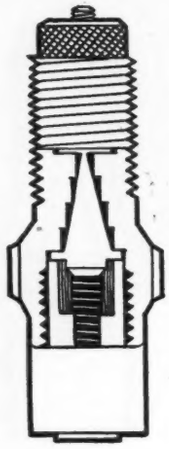


THE MOTOR WHEEL CORPORATION produces wheels complete from thriving forest trees to finished wheels. Wood stock is supplied by the Weis & Lesh Division, Memphis; Steel Stampings by the Gier Stamping Plant, Lansing, Mich., and the wheels are finished in the other two Motor Wheel Corporation plants, at Lansing. These immense facilities for production, combined with twenty years experience, have made this concern one of the largest institutions in the industry.

1922 MOTOR TRUCK SHOW

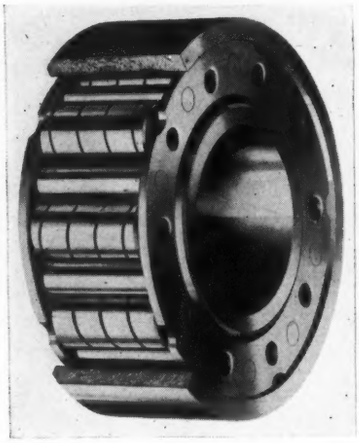
THE TREXLER COMPANY

THE accompanying illustration, which is that of an efficient tire valve, is the latest addition to the extensive line of Trexler products. It is known as the Trexler Tire Valve Lock and is stated to be absolutely positive in preventing leakage of air from the inner tube through the tire valve. This feature is particularly efficacious as it eliminates dependence on the human element of drivers, who neglectfully continue to operate their trucks with underinflated tires, because of the effort and inconvenience of coutinually inflating tires having leaky valves. Use of this valve will eliminate much of the harm and damage incident to the carelessness of many drivers.



Other products offered by this concern are the following: Trex Tire Tool; Trex Tire Chains; Trex Jacks; Trex Top Dressing; Trex Automobile Dressing; Trex Mechanics Tools; Tool Kits and Trex Tire Pumps.

Hyatt Roller Bearing Co.



HYATT ROLLER BEARINGS are distinctively individual. The races form a true cylindrical track for the rollers.

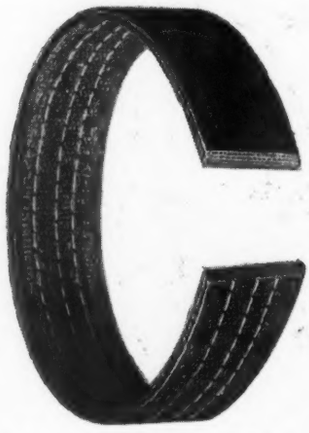
The rollers are coiled from high carbon alloy strip steel, resulting in continuous oil distribution, quiet operation, and ability to absorb tremendous shocks. The separator or cage is simple and rugged. The bearing as a whole is non-adjustable, extremely long lived, and cannot be improperly assembled.

General Tire & Rubber Co.

THIS company's line is confined to pneumatic tires, from the 30 x 3 clinchers up to the largest practical cord tires for trucks and buses. Also special Ford-sized cord tire, 30 x 3½, known to the trade as the "Jumbo."

In addition to its tires, General Tire & Rubber Company manufactures a compact and practical line of accessories.

THERMOID RUBBER CO.



THERMOID BRAKE LINING is folded and stitched and then hydraulic compressed to a solid homogeneous mass. It is made impervious to moisture, oil and gasoline by the exclusive process of grapnalizing. Uniform co-efficient of friction is maintained until the lining is worn as thin as cardboard.

The Thermoid Rubber Company also makes the Thermoid-Hardy Universal Joint and Thermoid Crolide Compound Tires and Tubes.

News of the Trade in Brief

Personal, Factory and Dealer Notes on Pages 64 and 83

Parts Manufacturers Discuss Outlook for 1922

A year of keen competition, with good business for the strong companies, and greater emphasis than ever before on quality products and service to the ultimate consumer—this is the outlook for 1922 in the automotive industry, according to a survey of financial executives and general managers of the principal parts and equipment manufacturers.

The results of a symposium, conducted by the Motor and Accessory Manufacturers' Association among its members, have just been made public by M. L. Heminway, general manager.

Predictions concerning the 1922 automobile passenger car and the truck production, and the consequent unit and accessory business, show a considerable divergence. Many of the companies report that indications in their own business point to a substantial upward trend during 1922. The figures generally given range between 20 per cent and 30 per cent as the expected increase, although some manufacturers look for a more profitable year without an increased volume. This attitude is based in the general reduction in overhead and increase in productive and distributing efficiency which characterized 1921 business.

Three large and representative unit manufacturers in Detroit, making respectively automobile bodies, radiators, and springs, were the first to answer the association's questionnaire and without exception they predicted a marked improvement in 1922. The body manufacturer stated flatly that he was figuring on an increase of about 33 1/3 per cent over 1921 sales.

"The outlook for 1922," said the radiator manufacturer, "is good. We believe a reasonable increase in output over 1921 will occur with those companies which are well established and giving good value in their product.

"The truck companies should do a considerably greater volume."

From the spring manufacturer came an opinion somewhat less certain, yet strongly forward looking and confident. "Business should be slightly better than 1921," he said, "with credit conditions crystalizing."

One of the most illuminating statements comes from a manufacturer in Cleveland, making a line of various automobile units:

"The outlook for 1922 is almost as vague as it was for 1921, at this time a year ago. There is, however, a healthier and more optimistic feeling abroad. We have learned to know who are the strong companies in the industry and who are the weak ones. Some of those we thought weak have proved to be exceptionally strong, and vice versa.

"The outlook for strong companies for 1922 is good.

"The public is not saturated with automobiles, it is merely saturated with second-choice and third-choice weak automobiles, but the demand for strong ones is good.

"We do not think, however, that 1922 is going to show much more automobile business than 1921, and we are trimming our sales accordingly. Our reasons for this are many: chiefly, that there has been no increase in business that would place new money in the hands of the wage earners or that would place dividend money in the hands of investors, and until this is done, there will be no new buying to speak of, of automobiles.

"We believe 1922 will not be worse than 1921. We believe it will be somewhat better and gradually become more so."

Have You Considered the Potentialities of Bus Sales?

The February Bus Number will provide you with just the information you need. It will contain, among many special articles bearing on all angles of this timely subject, a review of the most advanced types of bus chassis, buses and equipment.

SHOWS

January 19 to 25, 1922—Milwaukee, Wis. Annual Automobile Show of the Milwaukee Automotive Dealers' Assn., Auditorium (100,000 sq. ft.). Passenger Cars, Trucks and Accessories. Bart J. Ruddle, 316 Brumler Bldg.

January 21 to 28, 1922—Detroit, Mich. 21st Annual Show of Detroit Auto Dealers' Assn., Morgan & Wright Bldg. (150,000 sq. ft.). Passenger Cars, Trucks and Accessories. H. H. Shuart, Mgr., 4612 Woodward Ave.

January 23 to 28, 1922—Reading, Pa. Sixth Annual Show of Reading Auto Trade Assn., Crisswell Garage Bldg. (20,000 sq. ft.). Passenger Cars, Trucks, Tractors and Accessories. H. C. Lutz, Mgr., 22 South Fourth St.

January 23 to 30, 1922—Portland. Ore. 13th Annual Show of Automobile Dealers' Assn., of Portland, Auditorium (60,000 sq. ft.). Passenger Cars, Trucks and Accessories. Ralph J. Staehl, Mgr., 525 Henry Bldg.

January 28 to February 4, 1922—Chicago, Ill. Annual Automobile Show of the National Automobile Chamber of Commerce, at the Coliseum.

January 30 to February 4, 1922—Erie, Pa. 11th Annual Show of the Automotive Association of Erie, Roth-Cadillac Co. Bldg. (50,000 sq. ft.). Passenger Cars, Trucks and Accessories. C. R. Cummings, Mgr., 710 State St.

January 30 to February 4, 1922—London, Ont., Canada. Second Annual National Motor Show of Western Ontario, Armory and temporary buildings, auspices of Automotive Retailers' Assn., London, Ont. Passenger Cars, Trucks, Tractors, Accessories, Motorcycles and Bicycles. T. C. Kirby, Tecumseh Hotel.

February 1 to 4, 1922—Ypsilanti, Mich. First Annual Show of Ypsilanti Auto Dealers' Assn. (Michigan A. T. A. jurisdiction), Apex Motor Corp. Bldg. (18,000 sq. ft.). Passenger Cars, Trucks, Tractors and Accessories. T. E. Schaible, Box 566.

Coming Events

February, 1922 (tentative date)—Madison, Wis. Ninth Annual Show of the Automotive Dealer Division, Assn. of Commerce. Passenger Cars, Trucks and Accessories. Don W. Mowry, Cartwell Bldg.

February 3 to 10, 1922—Minneapolis, Minn. Fifteenth Annual Automobile Show, auspices of Minneapolis Auto Trade Assn. Passenger Cars, Trucks and Accessories. W. R. Wilmot, 709 Andrus Bldg., Minneapolis.

February 6 to 9, 1922—Scranton, Pa. Annual Truck Show, under the auspices of the Scranton Motor Trades Assn., Armory (50,000 sq. ft.). Hugh B. Andrews, Mgr., 411 Board of Trade Bldg.

February 6 to 11, 1922—Winnipeg, Canada. Second Annual Automotive Equipment Show, auspices of Western Canada Automotive Equipment Assn., Board of Trade Bldg., Auditorium. W. L. Williams, New Stovel Bldg., Winnipeg.

February 6 to 11, 1922—Minneapolis, Minn. Seventh Annual National Tractor and Power Farming, auspices of Northwest Tractor Trade Assn., and the Tractor and Thresher Dept. of N. I. & V. A., New Exhibit Bldg., Minnesota State Fair Grounds (100,000 sq. ft.). Tractors, Trucks, Accessories, Small Farm Equipment and Road Machinery. E. E. Whaley, Mgr., 1917 Lumber Exchange, Minneapolis.

February 11 to 18, 1922—Allentown, Pa. Annual Truck Show of Lehigh Valley Auto Trade Assn. P. W. Brooks, Secy., 1014 Hamilton St.

February 11 to 18, 1922—Kansas City, Mo. Annual Automobile Show of the Kansas City Motor Car Dealers' Association, at the Overland Bldg. E. E. Peake, Secy., 1019 Gloyd Bldg.

February 11 to 18, 1922—San Francisco, Cal. Sixth Pacific Automobile Show, auspices of Motor Car Dealers' Assn. of San Francisco, at Exposition Auditorium (70,000 sq. ft.). Passenger Cars, Trucks, Tractors and Accessories. G. A. Wahlgreen, 215 Humbolt Bank Bldg., Mgr.

February 11 to 18, 1922—Atlanta, Ga. Second Annual Great Southern Automobile Show, auspices of Atlanta Automobile Assn., Auditorium Armory. Passenger Cars, Trucks and Accessories. Virgil W. Shepard, 305 Connolly Bldg., Show Mgr.

February 14 to 17, 1922—Philadelphia, Pa. 21st Annual Exhibit and Convention of the Pennsylvania and Atlantic Seaboard Hardware Assn., Inc., at the Commercial Museum. Automobile Accessories. etc. Sharon E. Jones, Secy., 1314 Fulton Bldg., Pittsburgh, Pa.

February 18 to 25, 1922—Albany, N. Y. 13th Annual Show, auspices Albany Automobile Dealers' Assn., at State Armory. Passenger Cars, Trucks and Accessories. J. B. Wood, Secy., 28 Howard St.

February 18 to 28, 1922, San Bernardino, Calif. Automobile exhibit at the 12th Annual Orange Show, in tents (32,000 sq. ft.). Passenger Cars, Trucks, Tractors and Accessories. Royal H. Mack, Mgr., Chamber of Commerce.

February 20 to 25, 1922—Duluth, Minn. Seventh Annual Show of Duluth Auto Trade Assn., Duluth Armory Bldg. (70,000 sq. ft.). Passenger Cars, Trucks, Tractors and Accessories.

February 20 to 25, 1922—Deadwood, S. Dak. Tenth Annual Black Hills Auto Show of the Deadwood Business Club, Auditorium. Passenger Cars, Trucks, Tractors and Accessories.

February 22 to 25, 1922—Trenton, N. J. Seventh Annual Show, Trenton Automobile Trade Assn., Trenton Armory. Passenger Cars, Trucks and Accessories. Frederick Petry, Jr., Mgr., W. State and Willow Sts.

February 27 to March 2, 1922—Bethlehem, Pa. Seventh Annual Truck Show of Bethlehem Auto Trade Assn., Coliseum. Trucks. Tractors and Accessories. J. L. Elliott, Mgr., 1308 Norway Pl.

February 27 to March 4, 1922—Portland, Me. Automobile Show, auspices of Portland Automobile Dealers' Assn., Portland Exposition Bldg. Passenger Cars, Trucks, Tractors and Accessories. Howard B. Chandler, Mgr., 3 Park Ave.

February 28 to March 4, 1922—Wichita, Kan. Third Annual Show of the Wichita Motor Trade Assn., at Wichita Exposition Bldg. (100,000 sq. ft.). Passenger Cars, Trucks and Accessories. Guy H. Johnson, Secy., P. O. Box 372.

March 6 to 11, 1922—Indianapolis, Ind. 24th Semi-Annual Show of the Indianapolis Auto Trade Assn., Auto Show Building (85,000 sq. ft.). Passenger Cars, Trucks and Accessories. John B. Orman, Mgr., 338 N. Delaware St.

March 6 to 11, 1922—Nashville, Tenn. Automobile Show of the Nashville Automobile Trade Assn., Hippodrome or Page Garage. Passenger Cars, Trucks and Accessories. Allen F. Parkes, chairman, Packard Nashville Motor Co.

March 6 to 11, 1922—St. Joseph, Mo. 8th Annual Show of St. Joseph Automobile Show Assn., Auditorium (90,000 sq. ft.). Passenger Cars, Trucks, Tractors and Accessories. R. S. Trachsel, Secy.. 305 S. 8th St.

March 11 to 18, 1922—Boston, Mass. Twentieth Annual Automobile Show of the Boston Automobile Dealers' Assn., Inc., & Boston Commercial Motor Vehicle Assn., Inc.. Mechanics Bldg. (125,000 sq. ft.). Passenger Cars, Trucks, Tractors and Accessories. Chester I. Campbell, Mgr., 5 Park Sq.

March 11 to 18, 1922—Newark, N. J. 14th Annual Show at the First Regt. Armory (60,000 sq. ft.). Passenger Cars, Trucks, Tractors and Accessories. Clyde E. Holgate, Mgr., 343 High St.

March 11 to 18, 1922—Bronx, N. Y. Bronx County Automobile Show, at 105th Field Artillery Armory, 166th St. and Franklin Ave. Passenger Cars, Trucks and Accessories. H. G. Stiles, Mgr., 2483 Tiebout Ave., Bronx.

March 13 to 18, 1922—Omaha, Neb. 17th Annual Show of Omaha Auto Trade Assn., Omaha Auditorium. Passenger Cars, Trucks and Accessories. A. B. Waugh, 2051 Farnam St., Show Mgr.

March 22 to 26, 1922—Ann Arbor, Mich. 3d Annual Show of Washtenaw County Auto Dealers' Assn., Coliseum (20,000 sq. ft.). Passenger Cars, Trucks and Accessories. R. H. Alber, Mgr., care of Ann Arbor Garage.

March 27 to April 1, 1922—Oklahoma City, Okla. 6th Annual Show of the Oklahoma City Motor Car Dealers' Assn., at New Coliseum. Passenger Cars, Trucks and Accessories. Edgar T. Bell, Secy., 403 Oklahoman Bldg.

CONVENTIONS

Chicago, Ill., January 17 to 20, 1922—Annual Convention and Exhibit of the American Road Builders' Assn., at the Coliseum. Address Secy., 11 Waverly Pl., New York City.

Chicago, Ill., January 30 to 31, 1922—Fifth Annual Convention of the National Automobile Dealers' Assn.. La Salle Hotel.

Chicago, Ill., January 31 to February 4, 1922—Annual Convention of the Automotive Electric Service Assn., at the Hotel La Salle.

Chicago, Ill., January 30, 1922—Annual Trade Frolic of N. A. D. A., auspices of Chicago Automobile Trade Assn., La Salle Hotel.

Chicago, Ill., January 30 to 31, 1922—Annual Convention of the National Automobile Dealers' Assn., at La Salle Hotel. Harry G. Moock. Gen. Mgr., N. Grand Ave., St. Louis.

Chicago, Ill., February 1, 1922—Annual Chicago meeting of Society of Automotive Engineers. Two technical sessions at Chicago Automobile Club Dinner at Hotel Drake.

Milwaukee, Wis., January 23, 1922—Annual meeting of the Wisconsin Automotive Dealers' Assn.

Minneapolis, Minn., February 8 to 9, 1922—Annual Tractor Meeting and Dinner of the Society of Automotive Engineers.

Montgomery, Ala., January 23, 1922—Annual meeting of the Alabama Automobile Dealers' Association. Jas. B. Farley. Secy., Montgomery.

Trenton, N. J., May, 1922—Annual Convention of the New Jersey Automotive Trade Assn. H. S. Moore, Sec.-Treas., Trenton.

FOREIGN EVENTS

Amsterdam, Netherlands, February and March, 1922—Automobile Exposition.

Prague, Czecho Slovia, April 22 to May 1, 1922—14th International Automobile Exposition, auspices of Czecho Slovah Automobile Club, Prague.

Santiago. Chili, March, 1922—Annual Automobile Show.

Scheveningen, Netherlands, May 1 to 15, 1922—Automobile Exhibit. Address, No. 185 Spui., The Hague.

Road Building is the Truck Industry's Biggest Ally

IN numerous articles the COMMERCIAL CAR JOURNAL has stressed the importance of "Good Roads" to the motor truck dealer. At the expense of repetition we are setting forth some of the advantages of better highways, to the dealer.

1. Economic betterment of U S. business conditions, therefore a greater buying power which can be turned into truck purchasing.

2. More and better highways create a greater need for trucks.

3. Better highways help to preach the gospel of the utility of the motor truck.

4. Road construction and repair necessitates large hauling equipment, the motor truck answering the need nicely.

This year and the next is to be the biggest road building epoch in the history of the country. Never before were such large funds available. Never before had the good roads movement so many enthusiastic advocates. With more than a billion dollars available, all told, and a new Federal aid law now in effect making $75,000,000 available from the government during the coming year, which fund must be matched dollar for dollar from the various state treasuries, road financing, one of the big difficulties, has been somewhat overcome.

Carefully compiled statistics, based upon reports received during August, September, October and November, 1921, from 1201 states, counties, townships and municipalities, show that the industrial depression that has existed during the past year has affected the road building program but slightly.

One of the encouraging notes offered by the program is the possibility for palliating the unemployment situation. It has been estimated that the operations will provide work for a quarter of a million men.

Reports show that during the past four months, street and road projects were announced as contemplated but not yet voted, to a grand total of $242,994,623, of which the sum of $211,180,700 is for roads and $31,813,823 for streets. In addition, the American taxpayers, during August, September, October and November, actually voted $238,690,136 for new streets and roads and the public officials actually sold $140,656,808 worth of road and street improvement bonds. For streets, the sum of $37,330,174 was voted, and $25,791,681 in bonds were sold. For roads, the sum voted was $201,359,962 and the bonds sold were $114,865,127. The report showed new street improvements to be contemplated or actually under way in 559 cities and towns.

With vast sums such as these to be expended next year, over and above amounts previously authorized, it can be readily seen that the American people are in earnest about this matter of good roads and are taking to heart the fact that 85 per cent of our highways are yet to be surfaced and made practicable for modern motor traffic.

The Bureau of Public Roads reports that up to October 31, 1921, 27,000 miles of road were completed or under construction in the United States. The mileage reported entirely completed was 9555. The balance of 17,445 miles is in uncompleted projects, still under construction. These roads were 69 per cent completed by October 31, which is the equivalent of 12,000 miles of completed roads.

The Department estimates that the average cost of road building in the past has been $17,500 per mile. This forms the working basis for the estimated cost of building for 1922.

The National Automobile Chamber of Commerce, one of the leading exponents of good roads in the country, recently adopted a resolution to urge Congress to make the $100,000,000 highway appropriation an annual event for the next five years. The Chamber feels that the employment of state funds can be made to greater advantage if a definite policy is known far in advance. Automotive men are urged to lend their support to this movement.

Detroit to Have a Show

After a long period of doubt as to being able to get a building for their show, members of the Detroit Automobile Dealers' Association have had their problem solved through the generosity of the officials of the United States Tire Co., and the same big building that housed the show so splendidly last year will again be the scene of the exhibition.

The show will come between the two national shows, opening January 21 and closing January 28. Trucks will be given a prominent place this year, many dealers having already entered.

Manager H. H. Shuart is planning the finest automobile show in his long list of successes and the Motor City dealers look for a real revival of buying starting with this annual exhibition.

The dealers drew spaces at a meeting December 27.

Makes Plea for Uniformity in Volatility and Viscosity of Gasoline

Petroleum problems, as related to the automotive industry, received a large share of attention at the second annual meeting of the American Petroleum Institute at Chicago, December 6 to 8. Several prominent figures in the automotive world were among the speakers. One of the papers particularly applicable to the truck field, was a paper by Harry L. Horning, president and general manager of the Waukesha Motor Co. Mr. Horning brought to the attention of the oil men the variance in grade of the gasoline furnished automobile users and the consequent waste brought about by ignorance on the part of the average owner of these differences.

Calling attention to the increase in volatile content in gasoline last summer and fall, Mr. Horning said in part:

"It is not my place to moralize with you, but it is well for both our industries to ask if it is fair, I will put it even stronger, American in spirit, to foster a trade wherein the public is served with so varying a quality. I wonder how many oil companies took the trouble last fall to have their tank wagons and service stations tell their customers they could cut down the fuel feed. A simple service, this, but I fear, neglected. I make a plea for uniformity in volatility and viscosity and can promise, based on the opinion of the foremost engineers of the automotive industry, an improvement in mileage and a satisfactory saving as to first cost and upkeep of automotive apparatus if you will see that uniformity is approached."

On the subject of lubricating oils, which, Mr. Horning observed, have become one of the most vexing problems with the decline of volatility, he said: "Let us face the truth. The rule should be to use the lightest body oil possible. Low volatility of fuel is absolutely governing this, and millions of cars are lacking five to ten miles per gallon of fuel because of the problem of dilution. Dilution means an increase in consumption of lubricating oil by forcing frequent complete renewals. We find ourselves back again to volatility and viscosity in the last analysis of another important phase. Lubricating oil makes it possible for all kinds of machinery to run, yet this very problem of lubrication is becoming deeply involved with the question of uniformity in volatility of fuel."

In concluding, Mr. Horning averred that "there is a growing belief in the automotive industry that there is no real danger of a real fuel famine. Among executives there is a strong faith that a real famine does not face us as long as the problem lies in the hands of the American petroleum industry. I personally believe that so far as a motive fuel is concerned there is such an immense reserve in technical and scientific possibility that the incentive is all that will be needed, as the small near-famines threaten, to meet the demands of the many succeeding generations. There is no justification for the present waste on the basis of no threatened shortage of fuels."

Other automotive speakers at the institute were Edward S. Jordan, president of the Jordan Motor Car Co.; F. C. Mock, Stromberg Motor Devices Co., and O. C. Berry, Wheeler & Schebler Co.

Figures on November Automobile Trade

The normal seasonal falling off in automobile unit and equipment transactions is reflected in the November trade figures made public by the Motor and Accessory Manufacturers' Association.

During November, purchases of parts, units and accessories by the automobile passenger car and motor truck manufacturers, from approximately three hundred unit and equipment manufacturers, fell thirteen per cent under the October figures.

This trend is counterbalanced by the encouraging decrease of almost four per cent in the totals of past due accounts. However, the totals of notes outstanding show an increase of 5.73 per cent. The drop in the past due accounts is particularly encouraging in view of the fact that this curve had shown an upward tendency during September and October.

The recapitulated figures given for the eleven months of 1921 bear out the estimate made at the beginning of the year by impartial students of trade conditions in the industry, who emphasized the fact that recovery and adjustment in the automotive trade would be gradual. Manufacturers selling jobbers and dealers have been doing a progressively increasing business during the last few months and reports show that they are optimistic.

The percentage changes for the last ten months are:

Comparative Figures for 1921

Month	Per Cent Change*	Per Cent Change†	Per Cent Change‡
February ..	66.15 Inc.	17.07 Dec.	39.08 Inc.
March	93.30 Inc.	16.57 Dec.	16.38 Dec.
April	32.93 Inc.	4.49 Dec.	5.94 Inc.
May	00.13 Inc.	15.64 Dec.	16.77 Dec.
June	15.19 Dec.	4.79 Inc.	10.37 Dec.
July	1.68 Inc.	10.79 Inc.	7.09 Dec.
August	1.31 Inc.	17.06 Dec.	5.30 Dec.
September .	1.09 Dec.	00.22 Inc.	5.24 Inc.
October	4.70 Dec.	3.54 Inc.	5.82 Dec.
November ..	13.85 Dec.	3.56 Dec.	5.73 Inc.

*Purchases of parts, units, equipment, etc., by automobile passenger car and motor truck makers from 300 parts and accessory manufacturers by months—per cent change.

†Totals of past due accounts reported—per cent change.

‡Totals of notes outstanding—per cent change.

Gordon Cameron
Newly appointed Director of Service of the Republic Truck Sales Corp., Alma, Mich.

Changes Suggested for Dealer-Manufacturers' Contracts

For the past few years the realization has been growing in the automobile industry that changes were needed in the regulations that guide the relations between dealers or distributors and manufacturers, particularly those controlling factors which relate to cancellation of contract. During the boom period the discrepancies in the present system were not felt because production was high, and dealers were willing to take all the cars they could obtain. As production ebbed, cancellations were many, the only requirement for a termination of the agreement being a written notice by either party. By this notice shipments of cars stop at once. No reason need be offered for a termination of the agreement.

Realizing that something must be done to alleviate these conditions, representatives of the National Automobile Chamber of Commerce and the National Automobile Dealers' Association met in a number of joint sessions and have evolved several suggestions for a change in the existing regulations which, apparently, should do much toward a betterment of dealer-manufacturer relations.

These changes have to do with the allotment of motor vehicles and cancellations. While these changes are only suggestions, the N. A. C. C. expresses the opinion that they are proper ones for consideration by those who manufacture and distribute motor cars and trucks.

Representatives comprising the N. A. C. C. committee were: William E. Metzger, C. B. Voorhis, C. W. Matheson, H. T. Bouldon, and F. E. Connor. The N. A. D. A. members were: Jesse A. Smith, H. B. Harper, F. W. A. Vesper, A. J. Shorey, P. H. Greer, and N. H. Cartinhour.

The suggestions in dealer contracts are given herewith:

1. The distributor must furnish to the manufacturer an order for motor vehicles for the period of twelve months in advance for distribution in his territory, covering the allotment of models by months. The manufacturer may ship motor vehicles according to such statement unless the distributor shall notify the manufacturer from sixty to ninety days in advance of a change in the shipping schedule for any month or months. By the giving of such notice, unfilled shipments may be automatically cancelled, provided, however, that every distributor must, during each quarter of the contract year, take at least fifty per cent of his aggregate order for such quarter.

2. If, for any reason, the manufacturer does not ship, during any month, the orders specified for that month, such unshipped orders for that month may be automatically cancelled by the manufacturer and be deducted from the allotment to the distributor as specified for that month and in such case the manufacturer and distributor will be released from any further liability for such month on such unfilled order.

3. Any orders submitted by the distributor in excess of the monthly allotment as above provided, may be accepted

by the manufacturer at his option and when so accepted shall be deemed to be subject to all the conditions to which motor vehicles, ordered by annual allotment, are subject.

4. This agreement shall remain in force and effect until cancelled or terminated with or without cause by the giving of notice by either party to the other party in writing of fifteen to thirty days and at the end of the time specified in such notice, this agreement shall be deemed to be in all respects cancelled and terminated.

5. In the event of a cancellation or termination of this agreement such cancellation or termination shall be the act of a corporate officer, sales manager or other person duly authorized to cancel or terminate sales agreements.

6. It is agreed that in the event of the cancellation or the termination of this agreement by the manufacturer that said manufacturer obligates himself to repurchase at the net prices originally charged to the distributor, the distributor's stock of new salable cars of regular models of the current serial year shipped by manufacturer within six months before, and such parts as were originally purchased by the distributor from the manufacturer, which cars or parts are in the hands of the distributor at the date of said cancellation by the manufacturer.

7. In the event of the cancellation of this agreement by the distributor, the manufacturer at his option may purchase such stock of new motor vehicles or parts, sold by him to said distributor, and on hand at date of the cancellation or termination of this agreement by said distributor.

8. It is agreed that the distributor shall furnish the manufacturers semi-annually in each contract year, an inventory of parts on hand and shall return such parts to the manufacturer as may comprise an over-stock in the hands of the distributor or which the manufacturer has declared to be obsolete.

Note—Above suggestions also apply from distributor to dealer.

McQuay-Norris Acquires Wainwright Corp.

The plant and business of the Wainwright Engineering Corp., of Connersville, Ind., manufacturer of Wainwright pistons and pins, has been acquired by the McQuay-Norris Mfg. Co., of St. Louis, Mo., well-known piston ring manufacturer. The piston and pin business will be continued at Connersville under the name of the McQuay-Norris Mfg. Co. of Indiana. Plans are already under way for plant changes and additions to materially increase the output.

Harry A. Wainwright, who has been the active head of the Wainwright Engineering Corp., will become treasurer and general manager of the new Indiana company. Paul J. Barnard, vice-president and sales manager of the former company, will become secretary of the concern.

Truck Favored to Relieve Freight Congestion

Motor truck service to relieve the port conjection of freight between New Jersey and Manhattan has been recommended by the Port Authority of New York, and has been given serious consideration by the Bi-State Port Development Commission, although the plan has been favored by this body only as an auxiliary measure. The service would handle general package freight between lower Manhattan and the railroad yards in New Jersey.

To help arrive at a solution of the problem, the Commission asked B. F. Fitch, president of the Motors Terminal Co., to explain the successful system installed by his company in Cincinnati several years ago. This system was then made to apply to the needs of lower Manhattan.

The final recommendation of the Commission was the truck system be used as an auxiliary to the automatic electric system for distribution between Manhattan terminals of the system and secondary terminals throughout the city and for store door delivery to large consignees.

The Co-operative Plan in Action

Under its co-operative plan of operation in force, the Lease Motors Co., Inc., of New York, manufacturers and distributors of the Lease 1½-ton truck, recently held an enthusiastic meeting of all its employes for the election of four employe representatives on its Board of Directors. William Meyer and B. De Campo, both machinists, were elected to represent the employes of the factory; Forest Branch, assistant sales manager, to represent the sales force, and R. F. Dunnigan, assistant manager, to represent the office employes. Every employe of the company is a stockholder with a substantial investment in the business.

Tire Industry Anticipates Smooth Sailing for 1922

In looking over the achievements of the rubber industry for 1921, one factor stands out most prominently, "liquidation." January, 1921, opened among manufacturers and dealers with an exceedingly large stock on their hands, and as the month progressed this stock became less and less.

The Rubber Association of America, Inc., in their tabulation of manufacturers' inventories show 45 manufacturers to have on hand a total of 5,319,605 pneumatic casings, while 11 months later, November, 1921, 64 manufacturers reported a total of 3,908,342 casings. August was the biggest production month, 3,043,187, with January the smallest month, with an output of 703,430.

Oddly enough, the chief reason for a let-up in production is not directly attributable to a high inventory, but rather to the cost of raw material, wages, transportation and production costs. The lack of skilled labor was a big item this year, the factories being compelled to break in many new men.

The industry passed through large price fluctuations. The high costs of production at the beginning of the year necessitated an increase, but as the season advanced the prices again fell. Bottom prices had not been reached by the middle of the year, so another reduction occurred, toward the end of the season, more comprehensive than in any period of the industry's history. This reduction took place in the face of a threatened advance in the price of fabric and crude rubber.

A remarkable fact, in this respect, was the little effect such a violent reaction had on the stability of the rubber industry. Before several weeks had passed, tire buying was nearing its former status, and by the end of the year gratifying reports emerged from Akron of manufacturing recovery. The big plants hung out the "Men Wanted" shingle for the first time in many months and daily production was increased on every hand.

Of course the condition of sales for 1921 cannot be compared with the boom period during and after the war, but if a comparison is made with pre-war figures, the result is much better than has been painted.

Akron, "the City of Phenomenal Growth," ran the gamut of a violent depression, undergoing all the hardships of a depleted population and a continually threatening unemployment situation.

Today Akron lacks the spectacular growth of a few years ago, where housing conditions were so inadequate that men were forced to sleep in tents, but she is now operating on a firmer basis, having adopted the sound economics which are now the policies of the companies operating within her walls.

We predict a less violent and a non-spectacular period for the tire industry for 1922. There will be larger sales because automobile sales are to be larger. There will be fewer failures this year than during the past year, for the companies that have weathered the storm will have the stamina to withstand a period in which the seas will be calmer and the voyage a more direct one.

Grand Rapids Tire Making Expansions

Grand Rapids, Mich., Dec. 15.—Announcement has been made by the board of directors of the Grand Rapids Tire & Rubber Corporation, makers of Corduroy cord tires, that the capital stock of the company has been increased to $3,000,000. This action was made necessary in order to enlarge the factory to take care of the increase demand for the product.

The increased capitalization will permit the erection of additional factory buildings with new equipment so as to insure a daily production of 2,000 tires and 4,000 tubes.

It is the intention of the company to put in another complete unit, work on which will be started at once.

Trolley Bus to be Built in Canada

The Toronto Transportation Commission has recently placed an order with the Packard Ontario Motor Car Co., for four complete trolley buses for service in the City of Toronto. Bodies for these buses will be built by the Canadian Brill Co., and all electrical equipment will be supplied by the Canadian Westinghouse Co. The buses will be completely assembled in Canada at the Packard plant. This is the first trolley bus installation sold for Canadian delivery.

The buses will be similar in construction to the demonstration vehicle completed by the Packard Motor Car Co., on August 22, 1921, and they will be used to furnish transportation service in the outlying districts of Toronto, which are at the present time, inadequately supplied with service. The electrical equipment will be essentially the same as that used on the Packard demonstration bus mentioned above and on the bus recently completed by the St. Louis Car Co., and now in Detroit for demonstration purposes.

Motor Trucks and Trailers for Alexandria Municipality

In the early part of this year announcement was made that the Municipality of Alexandria, Egypt, intends to purchase motor trucks and trailers. The American Consul-in-Charge, S. Pinkney Tuck, Jr., reports that although the municipal finances do not permit of a purchase before next year, and a tender at the present moment would thus be premature, the director-general of the municipality states that he is interested in receiving catalog and descriptive literature for vehicles of the above kind. Communications should be addressed to H. Hopkinson Pasha, Director-General, Alexandria Municipality, Alexandria, Egypt.

General Had an Excellent Year

A successful year has just been closed by the General Tire & Rubber Co., of Akron, O., according to a report issued during the annual meeting recently. The company has had more sales in value than in 1920 and nearly 50 per cent more sales in units. Dividends were paid without a single omission and a bank indebtness of $1,400,000 in a year was wiped out. The firm is most optimistic for the future and is making plans for a big year.

Whipple Retires from Republic

The retirement of A. J. Whipple as general sales manager, has been announced by the Republic Truck Sales Corp. Further announcement regarding his successor will be made by the company shortly. It is reported that Mr. Whipple is joining another truck concern as sales manager, but this report has not been confirmed.

Sanford to Introduce New Model

The announcement of the addition of a new, light model and the return to the Sanford Motor Truck Co., Syracuse, N. Y., of its former chief engineer, J. E. Gramlich, is of interest. Mr. Gramlich, who, for the past two years, has acted as chief engineer of the Watson Wagon Works, builders of dump wagons and motor trucks at Canastota, N. Y., is credited with having designed the present Sanford models, the 2½, 3½ and 5-ton models.

The company is now bringing out a 1½-ton model, with considerable overload capacity, and equipped with electric starting and lighting outfit. The truck is said to be capable of 25 miles per hour.

Stewart Makes Price Reductions

New Year's prices are announced by the Stewart Motor Corp., Buffalo, N. Y. The total price reductions from September, 1920, are as follows: $1010 reduction on the 3½-ton, $910 on the 2½-ton, $985 on the 2-ton, $660 on the 1½-ton, $450 on the 1-ton and $255 on the speed truck, which is now priced at $1195 for the chassis. The company states that with the many improvements and refinements added the 1922 models will be the best the corporation has produced since its inception.

Reduction Made on G M C Truck

The General Motors Truck Co., of Pontiac, Mich., has made a substantial reduction on its heavy duty trucks effective January 1. These new prices represent a reduction from the original price of these models, ranging from $625 to $1050 per chassis and are as follows: 2-ton, Model K41, $2775; 3½-ton, Model K71, $3950, and 5-ton, Model K101, $4350. The one-ton chassis of this series was recently reduced to $1450.

Denby Announces Price Changes

Price reductions on all models, ranging from $140 to $555 on the 7-ton job, are announced by the Denby Motor Truck Co. The announcement also conveys the information that the 1-ton and 3-ton models have been discontinued. The reductions are as follows: ¾ to 1¼-ton, $140; 1½ to 2-ton, $155; 2-ton, $205; 4-ton, $305; 5-ton, $555; 7-ton, $555.

Maxwell One and a Half Ton Reduced

Effective immediately, a price reduction of $400 on all models of the Maxwell 1½-ton is announced by A. E. Barker, vice-president of the Maxwell Motor Corp., of Detroit, Mich.

Truck Problem Considered at Highway Convention

As this magazine reaches the hands of the reader, the 12th annual American Good Roads Congress and the 13th National Good Roads Show, held from January 16 to 20, in Chicago, Ill., will be in session. A paper of particular importance to the truck industry is to be read by J. G. McKay, Ph.D., professor of Economics, University of Wisconsin, entitled "Truck Overloading, Its Relation to Road Construction and Maintenance." The sessions on Highway Research and Highway Financing should also prove beneficial. The greatest interest, however, is centering around the Good Roads show at the Coliseum, where a number of truck manufacturing companies have placed exhibits.

A full account of the road congress and exhibit will be given in the February issue of the COMMERCIAL CAR JOURNAL, detailing the progress made in road building and transportation. A representative of this magazine will be on hand during this exhibit.

Perry Joins Weader Body Co.

Robert J. Perry has resigned his position as mill-room foreman with the W. F. Stewart Co., Flint, Mich., to accept a position as production manager with the Weader Body Co., McClure, Pa. Mr. Perry's experience in body building extends over a period of fourteen years, having held positions as assistant production manager with the Buick Motor Co., the Chevrolet Motor Co., and C. R. Wilson Body Co.

Mr. Weader, of the Weader Body Co., states that the production of the firm will be more than doubled in the near future.

Forbes Succeeds Mixter at Pierce-Arrow

M. E. Forbes, the present vice-president and treasurer, has been chosen by the directors of the Pierce-Arrow Motor Car Co., as president to succeed George W. Mixter. Operations at the Pierce-Arrow plant have increased to such an extent that 3,200 men are employed, as compared with 1,800 a few months ago. There is a fair rate of output despite the production of new truck and passenger car models.

Have You These Issues?

The National Automobile Chamber of Commerce has missing from its library files the following issues of the COMMERCIAL CAR JOURNAL: September, 1917; August, 1918, and September, 1918. The Chamber will pay $1.00 a copy plus postage for these issues. Communications should be addressed to W. L. Powlison, Librarian, Patents Dept., National Automobile Chamber of Commerce, 366 Madison Ave., at 46th St., New York, N. Y.

Personal Items

F. C. Allen. of the Export Department of the Firestone Tire & Rubber Co., will make a world-wide tour in the interest of that company.

Peter Brown and Bernard R. Banks, of Brown Brothers, Ltd., of London, England, a large English motor and accessory firm, are visiting the United States to attend the New York Show. Their headquarters will be the Belmont Hotel, New York.

Frank E. Carroll, one of the best known men in Pacific automotive circles and manager of the San Francisco branch of the Goodyear Tire & Rubber Co., has been made Pacific Coast manager of the New York Lubricating Oil Co. His headquarters will be San Francisco.

Theodore L. Dodd has been appointed Western Sales Manager for Chicago and surrounding territory with offices at 80 E. Jackson Blvd., for the United Smelting and Aluminum Co., Inc.. of New Haven, Conn.

Charles H. Domville, who several months ago joined the Commonwealth Motors Co., of Chicago, as district sales manager, has been appointed assistant sales manager. He was formerly associated with the Yellow Cab Manufacturing Co.

Bertram A. Doran, formerly assistant branch manager in the Orient for the General Motors Export Co., has been appointed special representative of the Export Dept., of the Maxwell-Chalmers companies in the Far East.

Walker Evans has been appointed Cleveland representative for McManus, Inc., of Detroit, advertising agency. Mr. Evans has had long experience in automotive accounts.

Ollie V. Garrison, who has until recently acted as purchasing agent for the Service Motor Truck Co.. Wabash, Ind., will have charge of purchases and act as assistant to the president for the Bimel Spoke and Auto Wheel Co., Portland, Ind.

Frank M. Germaine, who has recently resigned from the Marlin-Rockwell Corp., to become vice-president and a member of the Board of Directors, of the Gilliam Manufacturing Co., of Canton, O., will make his headquarters at the Bellevue Court Bldg., Philadelphia.

W. H. Girdlestone, formerly sales manager of the Eastern District of Splitdorf Electrical Co., has become sales manager in charge of battery and electrical service station equipment for H. B. Shontz, 161 West 64th St.. New York City. Mr. Girdlestone has been connected with the automotive industry for nearly 20 years.

P. H. Hart has been elected treasurer of the Goodyear Tire & Rubber Co. He succeeds H. H. Springford, who has become assistant to the president, with special charge of the Treasury Dept., the Comptroller's Dept., and the Merchandise Distribution Dept.

Earl A. Haskins, formerly assistant chief engineer of the United States Motor Truck Co., of Cincinnati, and recently vice-president of E. E. Springer & Co., Federal truck distributors at Norfolk, Va., has become sales engineer of the Hercules Motor Mfg. Co., of Canton, O.

Roy D. Heartz, at one time sales manager of the Moreland Motor Truck Co., Los Angeles, has been appointed general sales manager of the Leach Biltwell Motor Car Co., of Los Angeles.

R. S. Jemison, formerly advertising and sales promotion manager of the Oldfield Tire Co., Akron, O., has joined the United States Advertising Corp., Toledo, O., in an executive capacity. He was at one time in charge of sales promotion with the Miller Rubber Co., of Akron.

B. L. Leisure has become branch manager of the Firestone Tire & Rubber Co., Philadelphia branch, at 312 North Broad St.

E. Luman Mills has been appointed sales representative of the Klaxon Company, of Newark, N. J., in the eastern territory including the states of New York, New Jersey, Pennsylvania, Maryland, Delaware, and the District of Columbia.

Archie L. Nash has been appointed manager of the automobile advertising and publicity by the Cleveland Press, East 9th and Rockwell, Cleveland.

H. W. Scholl has been made sales manager for the Philbrin Corporation. Kennett Square, Pa. He was formerly connected with the Splitdorf Magneto Co., in the capacities of salesman, export sales manager, and finally sales manager.

W. J. Shay, who for the last seven years has been associated with the Champion Spark Plug Co., of Toledo, O., has been appointed sales manager of the Automotive Division of the Columbus McKinnon Chain Co., manufacturer of Dreadnaught chains. He will make his headquarters at Tonawanda, N. Y.

R. M. Tussing, sales and advertising manager of the Northwestern Chemical Co.. of which he was also a director, has resigned his position to engage in other activities at Columbus, O.

F. R. Valpey, New York branch manager for Graham Brothers, Evansville, Ind., has resigned to take charge of the Commercial Car and Truck Division of the Henshaw Motor Co., Boston, Mass., dealer for Dodge Bros. He will also introduce the Graham Brothers motor trucks in that territory.

Factory News and Capital Increases

The United States Steel Products Co., of Detroit, has leased an unoccupied factory building at Bellevue, O., and expects to start operation of a branch plant.

The Franklin Automobile Co., Syracuse, N. Y., announces that the regular force of 3,000 employes has been installed January 3. Production is to be speeded up by Feb. 1.

The Norman Piston Ring Corp., Peoria, Ill., has certified to an increase in the capital stock from $50,000 to $150,000, in order to provide funds for increasing the capacity of the plant.

The Robert H. Hassler, Inc., held an enthusiastic sales convention at the Claypool Hotel, Indianapolis. which proved of great benefit to all the distributors and salesmen present.

The Commonwealth Motor Co., of Rockdale, Ill., is now operating a night shift, due to a volume of orders for the Chicago Taxicab Co. The firm is planning increased production for the near future.

The Rubber Ace Tire Co.. Elgin, Ill., due to steadily increasing business, has found it necessary to make production expansions. The increased production has been possible by the addition of more men and new machinery. Other branch plants of the same concern at New Brunswick, N. J., and Wichita Falls, Texas, have taken similar steps.

The Jefferson Forge Products Co., of Detroit, has submitted its product, a forged steel wheel, to a number of laboratory tests, with favorable results. The firm is about to place the product on the market.

The B. J. S. Products Corp., 23 Washington St., New York City, manufacturer of a rain preventative for windshields and other products, has elected the following officers: President, John C. Baker; vice-president, S. S. Parsons, and secretary-treasurer, Francis J. Tietsort. The company has effected arrangements for European distribution.

Duty Motor Truck Corp. stockholders recently met in Elgin, Ill., and elected Arthur F. Lineman, of that city, a director. Interesting addresses by President W. H. Ruther, Secretary W. J. Gubser and General Manager M. L. Frank, were made at the meeting on the activities. S. M. Sandor discussed export plans and the prospects for securing foreign trade.

New Incorporations

The Trusko, Inc., San Francisco, Calif., is a new corporation with a capitalization of $100,000, that will deal in automobile parts.

The Penco Corp. has been chartered at Wilmington, Del., to deal in parts and supplies for automobiles, etc. The capitalization is $2,000,000.

J. B. Taylor & Sons has been chartered as a corporation at Lewisport, Ky., to deal in automobile supplies. The firm is capitalized at $100,000.

The Focuscope Company has been incorporated at Augusta, Maine, to manufacture and deal in automobile headlights, lighting fixtures, devices, etc. The capitalization is $100,000.

The Dillon Service Co. and automobile supply firm at Dillon, S. C., has been chartered with a capital stock of $20,000. J. R. Regan is president and W. Floyd, secretary and treasurer.

The Jury Manufacturing Co. has been organized at Freeport, Ill., to manufacture a "High Ball Safety Signal," for use on motor vehicles. A building has been leased and production will start in January.

The Reno Automotive Equipment Co., Inc., 41 West Plaza, Reno, Nev.. has been established on Reno's Automobile Row to do wholesaling and retailing of standard lines of automotive equipment. The officers are Harry Rabbes, president; J. A. Wood, vice-president, and G. L. Wood, secretary and treasurer.

Removals and Trade Changes

Wm. M. Moore Company, Inc., 1354 W. Girard Ave., Philadelphia, announced that it has changed its name to the General Tire Company of Philadelphia, Pa.

Hackney and Sons, automobile dealers of Wilson, N. C., recently suffered the loss of their plant by fire. The building and 100 cars and trucks were destroyed, the loss estimated at $500,000 with $360,000 insurance.

The Marko Storage Battery Co. is the new name of Paul M. Marko & Co., 1402 Atlantic Ave., Brooklyn, N. Y. The change is made to identify the company with the product it manufactures more clearly.

The Sterling Metal Products Co., a new Racine, Wis., concern which will manufacture tanks, fenders, hoods and mufflers, has purchased all the assets of the Splitex Radiator Co., of Racine, from Richard Harvey, trustee. The new concern will be operated by William Perry and H. F. Teshnow.

(Continued on page 83)

Replacement Table—Corrected Monthly

Including Piston Ring Sizes, Carburetor Sizes, Hose Sizes, Fan Belt Sizes, Brake Lining Sizes and Truck Frame Dimensions

Note: Under Carburetor Inlet Diameter Will be Found Either the Size of Main Air Intake or the Gasoline Fuel Line

Fan Belt Type: V—V-Shape, F—Flat, R—Round

Name, Model and Tonnage	ENGINE											BRAKE LINING								FRAME	
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length	Width
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Over All
Acason R-1—1920	4	1/4	1	....	....	.....	....	.....	....	.....	.....	....	11 1/2	3	1/4	2	11 1/2	3	1/4	2	112	34
Acason RB-1 1/2—1920	4	1/4	1	....	....	.....	....	.....	....	.....	.....	....	11 1/2	3 1/2	1/4	2	11 1/2	3 1/2	1/4	2	112	34
Acason H-2 1/2—1920	3	1/4	1 1/4	....	....	.....	....	.....	....	.....	.....	....	13 1/2	3 1/2	1/4	2	13 1/2	3 1/2	1/4	2	130	35
Acason L-3 1/2—1920	3	1/4	1 1/4	....	....	.....	....	.....	....	.....	.....	....	16	3 3/4	1/4	2	16	3 3/4	1/4	2	163 1/4	35
Acason M-5—1920	3	1/4	1 1/2	....	....	.....	....	.....	....	.....	.....	....	18	4 1/2	1/4	2	18	4 1/2	1/4	2	167 1/2	35
Ace, Series A 1 1/4—1920	3	1/4	1 1/4	H	10 3/4	2 1/4	6 1/2	2	37 1/2	1	F	12	3 1/4	4	1/4	4	12	3 1/4	1/4	4	122 1/2	32
Ace, Series A2 1/2—1919-20	4	1/4	1 1/4	V	10 3/4	2 1/4	5 1/2	1 1/4	33	1 1/4	F	13	3 1/2	4	1/4	4	13	3 1/4	1/4	4	144 1/2	32
Acme G-3/4	3	1/8	1	1	V	11	2	11	2	38 3/4	3/4	V	10 1/2	2 1/2	1/4	4	10 1/2	2 1/2	1/4	4	110 1/2	34
Acme B-1—1916-20	3	1/8	1	1	H	11	2	11	2	38 3/4	3/4	V	12	3 1/4	1/4	4	12	3 1/4	1/4	4	110 1/2	34
Acme F-1 1/2—1919-20	4	1/4	1	1	H	8	1 1/2	11 1/2	1 1/2	40	1 1/4	F	12	3 1/4	1/4	4	12	3 1/4	1/4	4	123 1/2	34
Acme A-2 1/4—1916-20	4	1/4	1 1/4	1 1/4	H	7	1 1/2	11	1 1/2	33 3/4	3/4	V	13	3 1/2	1/4	4	13	3 1/2	1/4	4	135	34
Acme AC-2 1/2—1921	4	1/4	1 1/4	1 1/4	H	10	1 1/2	13	1 1/2	33 1/2	1 1/4	F	13	3 1/2	1/4	4	13	3 1/2	1/4	4	140 1/2	34
Acme C-3 1/2—1917-20	4	1/4	1 1/4	H	11 1/2	1 1/2	13	1 1/2	33 1/2	1 1/4	F	15 1/2	3 3/4	4	1/4	4	15 1/2	3 3/4	1/4	4	150 1/2	36
Acme E-5—1919-20	3	1/4	1 1/2	H	11	2	11 1/2	2	40 1/2	2	F	18	4	4	1/4	4	18	4	1/4	4	159 3/4	37
Akron Multi-Truck 20-1 1/4	3	1/8	1 1/4	V	9	1 1/4	7 3/4	1 1/4	36 1/2	2	F	19 3/4	1 3/4	4	1/4	4	19 3/4	1 3/4	1/4	4	102	34
American 25-2 1/2	4	1/4	1 1/4	V	19	1 3/4	17	1 1/2	38	2	F	19	2 1/4	4	1/4	4	19	2 1/4	1/4	4	142	33
American 40-4	4	1/4	1 1/4	V	19	1 3/4	9 1/2	1 3/4	38	2	F	57	2 1/2	8	2	41 1/2	2 1/2	8	2	142	37
American 50-5	4	1/4	1 1/4	V	19	1 3/4	9 1/2	1 3/4	38	2	F	.....	.....	.....	.....	.....	.....	.....	.....	.....	158	37
Apex C-1	3	1/8	1	V	7 1/4	2	12	2	36 1/2	7/8	....	42	2	....	2	41 1/2	2	....	2	102	35 1/2
Apex D-1 1/2	3	1/8	1	V	7 3/4	2	12	2	36 1/2	7/8	....	42	2	....	2	41 1/2	2	....	2	102	35 1/2
Apex E-2 1/2	4	1/4	1	1 1/4	V	7 1/2	1 1/4	8	2	32	1	....	54	2 1/4	....	2	53 1/4	2	....	2	128	31 1/2
Apex G	3	1/8	1	1	V	12	2	15 1/2	2	34 1/2	1	....	42	2	....	2	41 1/2	2	....	2	102	35 1/2
Armleder 20	4	1/4	1	1/8	V	13	1 3/4	16 1/2	1 1/4	31 3/4	2	F	11 1/2	3 1/4	1/4	4	11 1/2	3 1/4	1/4	4	104 1/4	32
Armleder KW-3 1/2—1916-21	4	1/4	1 1/4	1/8	V	12 1/4	2	16 1/2	1 1/4	36	2	F	42	3	1/4	1	16	3 3/4	1/4	8	150	36
Armleder HW-2 1/2—1916-21	4	1/4	1 1/4	1/8	V	10	1 1/2	11 1/2	1 1/4	34	2	F	13 1/4	3 1/2	1/4	4	13 1/4	3 1/2	1/4	4	140	32
Atco B-1 1/2	4	1/4	1	1	V	11	2	11	1 1/4	31 1/2	2	F	25 1/2	2 1/2	1/8	4	18	2 1/2	1/8	4	109 3/4	32
Atco B1-1 1/2	4	1/4	1	1	V	11	2	11	1 1/4	31 1/2	2	F	46	2 1/2	1/8	2	46	2 1/2	1/8	2	109 3/4	32
Atco A-2 1/2	4	1/4	1 1/4	1 1/4	V	12	2	11	1 1/4	33 1/4	1 1/4	F	25 1/2	2 1/2	1/8	4	18	2 1/2	1/8	4	124 1/4	33
Atlas 21-1	3	1/8	1/4	H	9	2 1/4	14 1/2	2 1/4	31 1/2	1	F	40	2 1/4	1 1/8	1	22 1/2	2 1/4	1/8	1	84 3/4	33 1/4
Atterbury 20R-1 1/2—1920	4	1/8	1	3/8	....	8	1 1/2	14	1 1/2	38 1/2	1 1/4	F	11 1/8	3 1/4	1/4	4	11 1/8	3 1/4	1/4	4	122 1/2	34
Atterbury 7CX-2 1/2—1919-20	3	1/8	1 1/4	3/8	....	8 3/4	1 3/4	6 3/4	1 1/4	30 1/4	1 1/4	F	13 1/8	3 1/2	1/4	4	13 1/8	3 1/2	1/4	4	133 1/2	34
Atterbury 7D-3 1/2—1917-20	3	1/8	1 1/4	3/8	....	8	1 1/2	6	1 1/4	30 1/4	1 1/4	F	15 1/8	3 3/4	1/4	4	15 1/8	3 3/4	1/4	4	145 1/2	37 1/2
Atterbury 8E-5—1919-20	3	1/4	1 1/2	3/8	....	14	2	20 1/2	2	40	2	F	17 1/4	4	1/4	4	17 1/4	4	1/4	4	157 7/8	37 1/2
Autocar XXI-F-2—1915-20	4	1/8	1	1/8	....	3	1 1/8	4	1 1/8	.....	.....	....	16 1/4	2 1/2	1/8	4	13	2 1/2	1/8	4	91	34
Autocar XXI-G-2—1920	4	1/8	1	1/8	....	3	1 1/2	4	1 1/2	.....	.....	....	.....	2 1/2	1/8	4	13	2 1/2	1/8	4	114	34
Autocar XXVI-Y4—1920	3	1/4	1	1/8	....	3 1/2	1 1/2	3	1 1/2	48 3/4	1 1/2	F	25 1/2	2 3/4	1/4	4	25 1/2	2 3/4	1/4	4	121	34 1/2
Autocar XXVI-B-4—1920	3	1/4	1	1/8	....	3 1/2	1 1/2	3	1 1/2	48 3/4	1 1/2	F	25 1/2	2 3/4	1/4	4	25 1/2	2 3/4	1/4	4	176	34 1/2
Available H-1 1/2—1920	4	1/8	2 1/4	1	....	11	1 1/2	14	1 1/4	40	2	....	48	2 1/2	1/4	2	36	2 1/2	1/4	2	120	32
Available H-2 1/2—1916-20	3	1/8	2 1/4	1	....	11	1 1/2	14	1 1/2	40	2	....	13 1/2	3 1/2	1/4	4	13 1/2	3 1/2	1/4	4	144	32
Available H3—1916-20	3	1/8	2 1/2	1	....	11	1 1/2	14	1 1/2	42	2	....	16	3 3/4	1/4	4	16	3 3/4	1/4	4	168	36
Available H5—1916-20	3	1/4	2 1/2	1	....	12	2	16	2	40	2	....	18	4	1/4	4	18	4	1/4	4	168	38
Available H7—1919-20	3	1/4	2 1/2	1	....	12	2	16	2	40	2	....	72	3 1/2	1/4	2	72	3 1/2	1/4	2	168	38
Available H2—1921	4	1/8	2 1/4	1	V	12	1 1/4	14	1 1/4	40	2	F	48	2 1/2	1/4	2	36	2 1/2	1/4	2	120	32
Available H2 1/2—1921	4	1/8	2 1/4	1	V	12	1 1/2	14	1 1/4	40	2	F	13 1/2	3 1/2	1/4	4	13 1/2	3 1/2	1/4	4	144	32
Available H3 1/2—1921	4	1/8	2 1/2	1	V	12	1 1/2	14	1 1/4	42	2	F	16	3 3/4	1/4	4	16	3 3/4	1/4	4	168	36
Available H5—1921	4	1/4	2 1/2	1	V	12	2	16	2	40	2	F	18	4	1/4	4	18	4	1/4	4	168	38
Available H7—1921	4	1/4	2 1/2	1	V	12	2	16	2	40	2	F	72	3 1/2	1/4	2	72	3 1/2	1/4	2	168	38
Avery 1—1920	3	1/8	....	1	....	10	2	6 1/2	2	31 3/4	1 1/2	F	19 1/2	2	1/8	4	18 1/2	2	1/8	4	85	34
Bell M1	4	1/8	1	1/8	V	10	2	10	1 1/2	32	2	F	36	2 1/2	1/8	1	42	3	1/4	1	110	34
Bell E-1 1/2	4	1/8	1	1/8	V	10	2	10	1 1/2	32	2	F	39	2 1/2	1/8	1	48	3	1/4	1	114	34
Bell O-2 1/2	4	1/8	1 1/4	1/8	V	10	2	10	1 1/2	32	2	F	48	2 1/2	1/8	1	54	3	1/4	1	126	34
Belmont A-1	.....	.....	1	1 1/2	....	.....	....	.....	....	.....	.....	....	32	2	1/4	2	31	1 1/2	1/4	2	78	34
Belmont B-1 1/2	.....	.....	1	1 1/2	....	.....	....	.....	....	.....	.....	....	41	2	1/4	2	40	1 1/2	1/4	2	120	36
Belmont C-2	.....	.....	1	1 3/4	....	.....	....	.....	....	.....	.....	....	41	2 1/2	1/4	2	40	2	1/4	2	124	36
Bessemer G-1—1917-20	3	1/8	1	1/8	V	10	2 1/4	11 1/2	2 1/4	42	3/8	V	47 1/2	2	1/8	2	45 1/2	2 1/4	1/8	2	98	34
Bessemer H-2-1 1/2—1917-20	3	1/8	1	1/8	V	10	2 1/4	11 1/2	2 1/4	43	3/8	V	56 1/2	2 1/2	1/8	2	55	2 1/4	1/8	2	116	34
Bessemer J2-2 1/2—1919-20	3	1/8	1 1/4	1/8	V	5	1 1/2	12	2 1/2	36 1/4	1 1/4	F	56 1/2	2 1/2	1/8	2	55	2 1/4	1/8	2	141	34
Bessemer K2-4—1919-20	3	1/8	1 1/4	1/8	V	10	2 1/4	11 1/2	2 1/4	39 3/8	1 1/2	F	58 1/2	3 1/2	1/8	2	30 1/4	4 1/2	1/8	1	157 1/2	38
Brinton C-1 1/2—1921-22	3	1/8	1	1/8	....	11	1 1/4	13	1 1/4	33	1/8	F	39	2 1/2	1/8	1	38	2 1/2	1/8	1	118	33
Brinton D-2 1/2—1914-1920	3	1/8	1	1/8	....	11	1 1/4	13	1 1/4	33	1/8	F	13	3 1/2	1/4	2	13	3 1/2	1/4	2	135 1/2	33
Brockway S2-1 1/2—1919-20	3	1/8	1	....	V	10 1/2	2 1/4	5 1/2	2 1/4	39	1 1/4	F	20	2	1/8	4	20	2	1/8	4	118	32
Brockway K4-2 1/2—1919-20	3	1/8	1 1/4	....	V	6 1/2	1 3/4	13	1 1/4	34	1 1/4	F	12	3 1/8	1/8	4	12	3 1/8	1/8	4	142	34
Brockway R-2-3 1/2—1919-20	3	1/8	1 1/4	....	V	9 1/2	1 3/4	14	1 3/4	34	1 1/2	F	15 1/8	3 3/4	1/8	4	15 1/8	3 3/4	1/8	4	176	36
Brockway T-5—1919-20	3	1/4	1 1/2	....	V	13	2	22	2	40 1/8	2	F	18	4	1/4	4	18	4	1/4	4	176	36
Buffalo Tractor-Truck	4	1/8	1 1/4	1/8	V	7	1 1/8	13	1 1/8	41 1/2	2	F	48 1/8	2 1/4	1/4	2	48 1/8	2 1/4	1/4	2	124	.....
Capitol G1 1/2	3	1/4	1 1/8	1/8	V	18	1 1/4	18	1 1/4	32	1 1/4	F	47 1/8	2 1/2	1/8	1	33 1/4	2 1/2	1/8	1	120	32
Capitol H-2 1/2 and K-2 1/2	3	1/4	1 1/8	1	V	18	1 1/4	18	1 1/2	39 1/2	2	F	57 1/2	2 1/2	1/8	1	42 1/2	2 1/2	1/8	1	132	34
Capitol M-3 1/2	3	1/4	1 1/8	1	V	18	1 1/4	18	1 1/2	39 1/2	2	F	57 1/2	2 1/2	1/8	1	42 1/2	2 1/2	1/8	1	144	34
Case	3	1/4	1 1/8	1	V	7	1 1/2	6	1 1/2	47 1/8	2	....	25 1/2	2 1/2	1/8	4	24 1/4	2 1/4	1/8	4	106	31
Chicago C-1 1/2—1919-20	4	....	1	1 1/2	....	.....	....	.....	....	.....	.....	....	12 1/8	3 1/4	1/4	4	12 1/8	3 1/4	1/4	4	123	32
Chicago C-2 1/2—1919-20	4	....	1 1/4	1 1/4	....	.....	....	.....	....	.....	.....	....	13 1/4	3 1/2	1/4	4	13 1/4	3 1/2	1/4	4	135	32
Chicago C-3 1/2—1919-20	4	....	1 1/4	1 1/4	....	.....	....	.....	....	.....	.....	....	16	3 3/4	1/4	4	16	3 3/4	1/4	4	180	36 1/4
Chicago D-5—1920	4	....	1 1/4	1 1/4	....	.....	....	.....	....	.....	.....	....	18	4	1/4	4	18	4	1/4	4	180	36 1/4
Climber A-20	3	1/8	1	1 1/4	H	.....	....	.....	....	32	1	....	16	2 1/4	1/4	2	16	2 1/8	1/8	2	120	34
Clydesdale 120B-5	3	1/4	1 1/8	1/8	V	9	2	18 1/2	2	46 1/2	2	F	18	4	1/4	4	18	4	1/4	4	131	38
Clydesdale 90-3 1/2	3	1/8	1 1/8	1/8	V	9	1 1/2	14	1 1/2	42	1 1/2	F	16	3 3/4	1/4	4	16	3 3/4	1/4	4	143	38
Clydesdale 65EX 2 1/2	3	1/8	1 1/8	1/8	V	9	1 1/2	14	1 1/2	42	1 1/2	F	13 1/4	3 1/2	1/4	4	13 1/4	3 1/2	1/4	4	132	33 1/4
Clydesdale 65X-2 1/2	3	1/8	1 1/8	1/8	V	11	1 1/2	11	1 1/2	40	1 1/2	F	13 1/4	3 1/2	1/4	4	13 1/4	3 1/2	1/4	4	137	33 1/4
Clydesdale 42-1 1/2	3	1/8	1 1/8	1/8	V	9	1 1/2	12	2	41	.....	V	12	3 1/4	1/4	4	12	3 1/4	1/4	4	117	34
Clydesdale 20-1	3	1/8	1 1/8	1/8	V	15	2	12	2	41	.....	V	11 1/4	3	1/4	4	11 1/4	3	1/4	4	95	34
Clydesdale 18-3/4	3	1/8	1 1/8	1/8	V	15	2	12	2	41	.....	V	11 1/4	2 1/2	1/4	4	11 1/4	2 1/2	1/4	4	95	34
Collier 18-1—1919-20	3	1/8	1	....	V	9 3/4	2	10 1/2	1 1/4	40	1	F	24	3 1/2	1/4	4	24	3 1/2	1/4	4	106	35 1/4
Collier 19-1 1/2—1919-20	3	1/8	1	....	V	9 3/4	2	10 1/2	1 1/4	40	1	F	24	3 1/2	1/4	4	24	3 1/2	1/4	4	120	32
Collier 21-2—1918-20	3	1/8	1 1/2	....	V	6	1 1/2	10 1/2	1 1/4	40	1	F	27 1/2	3 1/2	1/4	4	27 1/2	3 1/2	1/4	4	132	32
Collier 22-2 1/2—1919-20	3	1/8	1 1/2	....	V	6	1 1/2	10 1/2	1 1/4	40	1	F	27 1/2	3 1/2	1/4	4	27 1/2	3 1/2	1/4	4	144	32
Columbia G-2 1/2—1921	3	1/8	1 1/4	1 1/4	V	11	1 1/4	10	1 1/4	38	1 1/4	F	55	3	1/4	2	50	2	1/4	2	132	32 1/2
Columbia H	3	1/8	1	1	V	12	2	11	1 1/4	38	1 1/4	F	42	2 1/2	1/8	2	40 1/2	1 1/4	1/8	2	120	32 1/2

Replacement Table—Continued

Name, Model and Tonnage	ENGINE												BRAKE LINING								FRAME	
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length	Width
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Over All
Commerce T-1500	3	1/4	1	1	V	10	2	10	2	44	3/4	V	50	2	1/4	2	48 1/2	2	1/4	2	92 5/8	34
Commerce 12-3000	3	1/4	1	1	V	10	2	10	2	44	3/4	V	45	2 1/2	1/4	2	43	2 1/4	1/4	2	99 5/8	34
Commerce 16-4000	3	1/4	1	1	V	10	2	10	2	44	3/4	V	50 3/4	2 1/2	1/4	2	48	2 1/4	1/4	2	108 5/8	34
Commerce 18-5000	3	1/4	1 1/4	1	V	6	1 1/2	11	1 1/2	33	1 1/4	F	50 3/4	2 1/2	1/4	2	48	2 1/4	1/4	2	128 5/8	34
Concord A-2—1921	4	1/4	1 1/4	1	H	11	2 3/8	9 1/2	1 1/2	34	2	F	12	3 1/4	1/4	4	12	3 1/4	1/4	4	108 1/4	32 1/4
Concord AX-2—1921	4	1/4	1 1/4	1	H	11	2 3/8	9 1/2	1 1/2	34	2	F	12	3 1/4	1/4	4	12	3 1/4	1/4	4	122 5/8	32 1/4
Concord B-3—1921	4	1/4	1 1/4	1	H	11	2 3/8	9 1/2	1 1/2	34	2	F	13 1/2	3 1/2	1/4	4	13 1/2	3 1/2	1/4	4	122 1/2	32 1/4
Concord BX-3—1921	4	1/4	1 1/4	1	H	11	2 3/8	9 1/2	1 1/2	34	2	F	13 1/2	3 1/2	1/4	4	13 1/2	3 1/2	1/4	4	155 5/8	32 1/4
Corbitt E-1—1917-20	3	1/4	1	1	....	8	2	14	2	38	5/8	V	19	2	1/4	2	19	2	1/4	2	105	34
Corbitt D-1½—1916-20	3	1/4	1 1/4	1	....	8	2	14	2	38	5/8	V	45 1/4	2	1/4	1	45 1/4	2	1/4	1	120	34
Corbitt C-2—1915-20	3	1/4	1 1/4	1	....	14	1 1/4	13	1 1/4	36	1 1/4	F	51 1/2	2 1/4	1/4	1	51 1/2	2 1/4	1/4	1	138	35
Corbitt B-2½—1916-20	3	1/4	1 1/4	1	....	14	1 1/4	13	1 1/4	36	1 1/4	F	51 1/2	2 1/4	1/4	1	51 1/2	2 1/4	1/4	1	138	35
Corbitt AA-5—1919-20	3	1/4	1 1/2	1	....	13	1 1/4	8	1 1/4	36	2	V	69 1/4	3	1/4	1	69 1/4	3	1/4	1	160	38
Corbitt A-3½—1917-20	3	1/4	1 1/4	1	....	13	2	14	2	36	1 1/4	V	64	2 1/2	1/4	1	64	2 1/2	1/4	1	160	35
Cyclone A-3000	3	1/4	1	1	V	16	2	16	2	32 1/2	1 1/4	F	21 1/4	2 1/2	1/4	4	19 3/4	2 1/4	1/4	4	113	34
Dart H-1—1920-21	3	1/4	1 1/4	1 1/4	H	11	2	8	1 3/4	36	1	F	19	1 3/4	1/4	4	19	1 3/4	1/4	4	102	34
Dart S-1½—1920-21	3	1/4	1 1/4	1 1/4	H	11	2	8	1 3/4	36	1	F	19	1 3/4	1/4	4	19	1 3/4	1/4	4	112	34
Dart M-2½—1920-21	4	1/4	1 1/4	1 1/4	H	11	2	14	1 1/4	35	2	F	10	2 1/2	1/4	2	19	3 1/2	1/4	4	124	34
Dart W-3½—1920-21	4	1/4	1 1/2	2	H	11	2	12	1 1/2	36	2	F	28	2 3/4	1/4	4	28	2 3/4	1/4	4	144	38
Day-Elder AS-1	3	1/4	1 1/4	1 1/4	V	9	2	9 1/2	2	40	5/8	V	19	2	1/4	4	19	2	1/4	4	108	35
Day-Elder B-1½	3	1/4	1 1/4	1 1/2	V	9	2	9 1/2	2	40	5/8	V	19	2	1/4	4	19	2	1/4	4	120	35
Day-Elder D-2	3	1/4	1 1/4	1 1/2	V	4	1 1/2	9	1 3/8	35	5/8	V	45	2	1/4	2	45	2	1/4	2	125	35
Day-Elder C-2½	3	1/4	1 1/4	1 1/2	V	10 1/2	2	12	1 3/8	36 3/4	2	F	52	2 1/4	1/4	2	52	2 1/4	1/4	2	123	35
Day-Elder F-3½	3	1/4	1 1/4	1 1/4	V	6 3/4	1 3/4	12	1 1/4	35 1/4	1 1/2	F	56 1/2	2 1/2	1/4	2	56 1/2	2 1/2	1/4	2	148	35
Day-Elder E-5	3	1/4	1 1/2	1 1/4	V	12 1/2	2	10	1 3/8	38 1/2	1 1/2	F	69	3	1/4	2	69	3	1/4	2	155	37
Dearborn BW-2—1915-17-19-20	3	....	1	....	....	8 3/4	2	6	1 3/4	37	1	F	18	2 1/2	1/4	2	18	1 1/2	1/4	2	130	32
Dearborn F-1½—1915-17-19-20	3	....	1	....	....	12	2	8	1 3/4	37	1	F	16 1/2	2 1/2	1/4	2	16 1/2	1 1/2	1/4	2	96 1/2	34
Dearborn C-1—1915-17-19-20	3	....	3/4	....	....	....	....	....	....	....	....	....	38	2	1/4	1	38	2	1/4	1	107	32
Defiance B-1½—1918-19-20	3	1/4	1	1	V	10	2	8	2	40 3/4	1 1/4	F	45	2 1/2	1/4	1	43 1/4	2 1/4	1/4	1	116	34
Defiance C-2—1918-19-20	3	1/4	1	1	V	10	2	8	2	40 3/4	1 1/4	F	54 1/8	2 1/2	1/4	1	52 1/2	2 1/4	1/4	1	116	34
Defiance D—1920-21	3	1/4	1	1	V	10	2	8 1/2	1 1/4	40 3/4	1 1/4	F	45	2 1/2	1/4	1	43 1/4	2 1/4	1/4	1	120	34
Defiance E—1920-21	3	1/4	1	1	V	10	2	8 1/2	1 1/4	40 3/4	1 1/4	F	54 1/8	2 1/2	1/4	1	52 1/2	2 1/4	1/4	1	120	34
Denby 31-1½—1921	3	1/4	1	....	....	6	2 3/8	19	2 3/8	33 3/8	1 1/4	F	49	2 1/2	1/4	2	47 1/2	2 1/4	1/4	2	97 3/8	34
Denby 33-1½-1921	3	1/4	1	1	....	9	2	12	2	41 1/8	3/4	V	8 1/2	4	1/4	2	46 1/2	1 1/2	1/4	2	120	33 1/8
Denby 134-2—1921	3	1/4	1	1	....	9	2	12	2	41 1/8	3/4	V	53 1/4	3	1/4	2	50 1/4	2	1/4	2	127	34
Denby 25-3—1921	3	1/4	1 1/4	1 1/4	....	9	2	12	2	32 5/8	1 1/4	F	56 1/4	3	1/4	2	47 1/4	2	1/4	2	127	34
Denby 27-4—1921	3	1/4	1 1/4	1 1/4	....	13	1 3/4	16 1/4	1 1/4	32	1 1/2	F	8 1/2	4	1/4	2	58	2 1/2	1/4	2	140	34
Denby 210-5—1921	3	1/4	1 1/4	1 1/4	....	13	1 3/4	16 1/4	1 1/4	32	1 1/2	F	8 1/2	4	1/4	2	89	2 1/4	1/4	2	140	34
Dependable Dispatch A-1 1921	4	1/4	1	1/4	V	14	2 1/4	15	1 1/4	37 1/2	2	F	53 1/4	2 1/4	1/4	1	38 1/4	2 1/4	1/4	1	108	33 1/2
Dependable C-1½—1920-21	4	1/4	1	1/4	V	14	2 1/4	15	1 1/4	37 1/2	2	F	53 1/2	2 1/2	1/4	1	38 1/2	2 1/2	1/4	1	121	33
Dependable D-2 1920-21	4	1/4	1 1/4	1/4	V	10	2 1/4	11 1/2	1 1/4	37 1/2	2	F	53 1/2	2 1/2	1/4	1	38 1/2	2 1/2	1/4	1	140	33
Dependable E-2½—1920-21	4	1/4	1 1/4	1/4	V	10	2 1/4	11 1/2	1 1/4	37 1/2	2	F	63	2 1/2	1/4	1	49	2 1/2	1/4	1	152	33
Dependable G-3½ 1921	4	1/4	1 1/4	1/4	V	13	2	13	1 1/4	37 1/2	2	F	63	2 1/2	1/4	1	49	2 1/2	1/4	1	170	33
Diamond T-O-3-1	3	1/4	1	1 1/4	V	9	1 1/4	6	1 1/4	35	2	F	48	2 1/2	1/4	2	33	2 1/2	1/4	2	100	34
Diamond T-FS&T-1½	3	1/4	1	1 1/4	V	9	1 1/4	6	1 1/4	35	2	F	11 1/2	3 1/4	1/4	4	11 1/2	3 1/2	1/4	4	Opt	34
Diamond T-U-2	3	1/4	1 1/4	1 1/4	V	9	1 1/4	6	1 1/4	35	2	F	13 1/4	3 1/2	1/4	4	13 1/4	3 1/2	1/4	4	Opt	34
Diamond TK-3½	3	1/4	1 1/4	1 1/2	V	10	1 1/2	10	1 1/2	35	2	F	15 3/8	3 3/4	1/4	4	15 3/8	3 3/4	1/4	4	Opt	37
Diamond T-EL-5	3	1/4	1 1/4	1 1/2	V	10	1 1/2	10	1 1/2	35	2	F	18	4	1/4	4	17 1/4	4	1/4	4	Opt	37
Diamond T-S-5	3	1/4	1 1/2	1 1/4	V	9	2	21	2	40 3/8	2	F	18	4	1/4	4	17 1/4	4	1/4	4	Opt	37
Diehl A	3	....	1	1	....	....	....	....	....	....	....	....	28	2 1/2	1/4	2	27	2	1/4	2	90	....
Doane 2½—1917-18-19-20	3	1/4	1 1/4	1/4	H	9	1 1/4	12	1 1/4	32	1 1/2	F	35	3	1/4	2	18	3 1/2	1/4	4	126	53
Doane 3½—1920	3	1/4	1 1/4	1/4	H	12	1 1/4	15	1 1/2	38 3/8	1 1/2	F	35	3	1/4	2	18	3 1/2	1/4	4	156	58
Doane 6—1917-18-19-20	3	1/4	1 1/2	1/4	H	15	1 1/4	17 1/2	1 1/4	43	1 1/2	F	38	3	1/4	2	24	4	1/4	4	168	64
Dodge Bros.-½—1920-21	3	1/4	1 1/8	1/4	....	7	1 1/2	7 1/4	1 1/8	31	1	F	19 3/4	2 1/4	1/4	2	14 3/4	1 3/4	1/4	2	47 3/8	38
D-Olt	3	1/4	1	1/4	H	18	2	18	2	36	1	F	54	3	1/4	2	42	3	1/4	2	240	34
Dorris K-4-2½—1918-20	3	1/4	1 1/4	1 1/4	V	2 1/4	1 1/2	6 1/4	1 1/4	40 3/4	1	F	13 1/2	3 1/2	1/4	4	13 1/2	3 1/2	1/4	4	142 3/4	34
Dorris K7-3½—1919-20-21	3	1/4	1 1/4	1 1/4	V	2 1/4	1 1/2	6 1/4	1 1/4	40 3/8	1	F	15 3/4	3 3/4	1/4	4	15 3/4	3 3/4	1/4	4	179 1/2	36
Double Drive B3	4	1/4	1 1/4	1 3/4	....	....	....	....	....	....	....	....	29	2 1/4	1/4	1	29	2 1/4	1/4	1	124	36
Douglas GW-1½	3	....	1 1/4	1/4	....	....	....	....	....	....	....	....	45	2 1/2	1/4	2	44	2 1/4	1/4	2	118	31
Douglas G-1½	3	....	1 1/4	1/4	....	....	....	....	....	....	....	....	46	2 1/2	1/4	2	44	2 1/4	1/4	2	118	31
Douglas H-2	3	....	1 1/4	1/4	....	....	....	....	....	....	....	....	55	2 1/2	1/4	2	52	2 1/4	1/4	2	118	31
Douglas HW-2	3	....	1 1/4	1/4	....	....	....	....	....	....	....	....	54	2 1/2	1/4	2	42	2 1/4	1/4	2	118	31
Douglas I-3	3	....	1 1/4	1/4	....	....	....	....	....	....	....	....	58	2 1/2	1/4	2	44	2 1/4	1/4	2	132	31
Drake T-60	3	1/4	1 1/4	....	V	9	1 1/2	8	1 1/4	.....	1 1/4	F	52 1/4	2 1/2	1/4	1	37	2 1/2	1/4	1	106	.....
Duplex E-3½	3	1/4	1 1/4	1	....	....	....	....	....	....	....	....	9 1/2	2 1/2	1/4	2	5 1/2	2 1/2	1/4	2	126	39 1/8
Duplex A	4	....	1 1/4	1 1/2	....	....	....	....	....	....	....	....	....	2	....	4	....	2	....	4	121	34
Duty 2—1921	3	1/4	1 1/2	1 1/4	V	7	2 1/4	18	2	38	1	F	45	2 1/2	1/4	1	40	1 3/4	1/4	1	123	44
Eagle 100-2	4	1/4	1 1/4	1	....	14	2	16	1 1/4	33 3/8	2	....	49 1/2	3	1/4	1	46	2	1/4	1	Opt	36
Earl 40	3	....	....	1	H	5	2	5	2	34 1/2	1	F	40 3/4	2	....	....	21 1/2	2	....	....	155	.....
Fageol 1½—2—1920-22	3	1/4	1 1/8	1 1/2	V	15 1/2	1 1/4	11 1/2	1 1/4	31	5/8	V	19 1/4	1 3/4	1/4	2	19 1/4	1 3/4	1/4	2	120	30
Fageol 2½-3—1917-22	3	1/4	1 1/4	1 1/4	V	10	1 1/4	14 3/4	1 1/4	34 3/4	1 1/2	F	13 1/4	3 1/2	1/4	2	13 1/4	3 1/4	1/4	2	141	34
Fageol 3½-4—1917-22	3	1/4	1 3/8	2	V	9	1 1/2	17 1/2	1 1/2	40 1/2	1 1/2	F	15 1/2	3 3/4	1/4	2	15 1/2	3 3/4	1/4	2	159 1/2	37 1/8
Fageol 5-6—1917-22	3	1/4	1 3/8	2	V	9	1 1/2	17 1/2	1 1/2	40 1/2	1 1/2	F	18	4	1/4	2	18	4	1/4	2	161 1/4	37 1/8
Fargo O17, P18-2, P19-2, P20-2	3	1/4	....	1 1/8	....	10	2	10	2	42	5/8	V	52	3	1/4	2	50 1/2	2	1/4	2	132	33
Fargo R—1921	3	1/4	....	1 1/8	....	10	2	10	2	42	5/8	V	52	3	1/4	2	50 1/2	2	1/4	2	132	33
Federal SD-1-1½	4	1/4	1	1 1/4	V	15	1 1/2	7	1 1/2	35 5/8	1	F	10 1/4	3	1/4	4	10 1/4	3	1/4	4	112	34
Federal TE-1½-2	3	1/4	1 1/4	1 1/2	V	7	1 1/4	6	1 1/2	32 1/2	1	F	13 1/8	3 1/2	1/4	4	13 1/8	3 1/2	1/4	4	118	34
Federal UE-2-2½	3	1/4	1 1/4	1 1/2	V	7	1 1/4	6	1 1/2	32 1/2	1	F	13 1/8	3 1/2	1/4	4	13 1/8	3 1/2	1/4	4	134	34
Federal WE-3½-4	3	1/4	1 1/4	1 1/2	V	12 1/2	1 1/4	9	1 3/4	39	1 1/2	F	15 5/8	3 3/4	1/4	4	15 5/8	3 3/4	1/4	4	154	38
Federal X-2-5-6	4	1/4	1 1/4	2	V	10	2 1/4	14 1/8	1 7/8	40 7/8	1 3/4	F	17 1/4	4	1/4	4	17 1/4	4	1/4	4	154	38
Federal Light Duty	3	1/4	1 1/4	1 1/2	V	7	1 1/4	6	1 1/2	32 1/2	1	F	13 1/8	3 1/2	1/4	4	13 1/8	3 1/2	1/4	4	86	34
Federal Heavy Duty	3	1/4	1 1/4	1 1/2	V	12 1/2	1 1/4	9	1 3/4	39	1 1/2	F	15 5/8	3 3/4	1/4	4	15 5/8	3 3/4	1/4	4	82	38
Ford T-1	3	1/4	1.06	1 1/8	H	4	2	.....	1 3/4	27	1 1/8	F	23 3/4	1 1/8	1/4	1	12	1 1/8	1/4	2	60	23
Front Drive C1½	4	1/4	1	1 1/2	....	....	....	....	....	....	....	....	13	3	1/4	2	15	3	1/4	2	124	36
F.W.D. B-3	3	1/4	1 1/4	1 1/8	....	....	....	....	....	....	....	....	27	3 1/2	1/4	1	43	2 3/4	1/4	2	136	36
Garford 15-¾-1921	4	1/4	1	....	V	....	....	....	....	34	1 1/2	F	11	2 1/2	1/4	4	11	2 1/2	1/4	4	96	34
Garford 25-1¼—1920	3	1/4	1 1/4	....	H	....	....	....	....	37 1/8	1	F	11 3/4	3 1/4	1/4	4	11 3/4	3 1/4	1/4	4	108	34
Garford 70H-2—1920	4	1/4	1 1/4	....	V	....	....	....	....	34 1/8	2	F	13 1/8	3 1/2	1/4	4	13 1/8	3 1/2	1/4	4	121	34
Garford 77D-3½--1920	4	1/4	1 1/4	....	V	....	....	....	....	39	2	F	15 5/8	3 3/4	1/4	4	15 5/8	3 3/4	1/4	4	144	36
Garford 68D-5-1921	4	1/4	1 1/2	....	V	....	....	....	....	41 1/8	2	F	17 3/4	4	1/4	4	17 3/4	4	1/4	4	150	36
Garford 150-A-7½-1921	4	1/4	1 1/2	....	V	....	....	....	....	41 1/8	2	F	10 1/2	4	3/8	2	21 3/8	4	1/4	4	150	36
Gersix K-2½—1920	4	1/4	1 1/4	1 1/4	H	12	2	14	1 1/4	36	2	....	20	2 1/2	1/4	4	47	2 1/4	1/4	2	131	34
Gersix M-1½—1920	4	1/4	1 1/4	1 1/4	H	1:	2	14	1 1/4	36	2	....	46	2	1/4	2	46	2	1/4	2	114	32
Gersix L-3½	4	1/4	1 1/4	1 1/4	H	1: 1/2	2	16	1 1/4	36	2	....	56	2 1/2	1/4	2	56	2 1/2	1/4	2	144	36 1/2
Giant 15A-1½	3	1/4	1	....	....	....	....	....	....	....	....	....	19	2	1/4	4	19	2	1/4	4	116 1/2	32
Giant 16-2½	3	1/4	1 1/4	....	....	....	....	....	....	....	....	....	45 1/2	2	1/4	2	45 1/2	2	1/4	2	140 1/2	33
Giant 17-3½	3	1/4	1 1/2	....	....	....	....	....	....	....	....	....	56 1/2	2 1/2	1/4	2	46 1/2	2 1/2	1/4	2	183 1/2	36
G.M.C. K-15	4	1/4	1 1/4	1 1/8	V	8 3/4	1 1/2	8 1/8	1 1/2	35 5/8	1 1/8	V	49 1/8	2 1/8	1/4	2	47	2 1/8	1/4	2	89	34
G.M.C. K-16	4	1/4	1 1/4	1 1/8	V	8 3/4	1 1/2	8 1/8	1 1/2	35 5/8	1 1/8	V	49 3/8	2 1/8	1/4	2	47	2 1/8	1/4	2	89	34
G.M.C. K-41	4	1/4	1 1/4	1 1/8	V	10 1/4	1 3/4	9 1/2	1 3/4	37 1/8	1 1/8	V	13	3 1/2	1/4	4	13	3 1/2	1/4	4	Opt	33
G.M.C. K-71	4	1/4	1 1/4	1 1/8	V	11 3/4	1 3/4	9 1/2	1 3/4	37 1/8	1 1/8	V	15 1/8	3 3/4	1/4	4	15 1/8	3 3/4	1/4	4	Opt	38

Replacement Table—Continued

Name, Model and Tonnage	ENGINE												BRAKE LINING								FRAME	
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length	Width
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Over All
G.M.C. K-101	4	¼	1¼	1⅝	V	11¾	1¾	9½	1¾	37⅞	1¼	V	17¾	4	¼	4	17¾	4	¼	4	Opt	38
Gramm-Bernstein 10 Speed—1921	3	⅛	1	1½	V	12	2¾	14½	2¼	29	1	F	48	2	⅛	2	26	2	⅛	1	97	30
Gramm-Bernstein 15-1½—1921	3	⅛	1	1½	V	10¼	2	6	2	39	1¼	F	48½	2	⅛	2	45⅞	1½	⅛	2	120	32
Gramm-Bernstein 65-1½.—1921	3	⅛	1	1½	V	10¼	2	6	2	39	1¼	F	19¾	1¾	⅛	4	19¾	1¾	⅛	4	120	32
Gramm-Bernstein 20-2—1921	3	⅛	1¼	1½	V	4½	1½	12	1½	32	2	F	45	2	⅛	4	45	2	⅛	4	126	32¼
Gramm-Bernstein 30-3—1922	3	¼	1¼	1½	V	11	1½	9	1½	33¾	2	F	22¾	2¼	¼	4	22¾	2¼	¼	4	129¾	36
Gramm-Bernstein 35P-3½—1922	3	¼	1¼	1½	V								22¾	2¼	¼	4	22¾	2¼	¼	4	129¾	36
Gramm-Bernstein 40-4—1922	3	¼	1¼	1½	V	11	1½	9	1½	33¾	2	F	28¾	2¾	¼	4	28¾	2¾	¼	4	144	36
Gramm-Bernstein 50-5-6—1922	3	¼	1½	1¾	V	23¼	2	13¾	1⅞	40¾	2	F	32	2¾	¼	4	32	2¾	¼	4	162	36
G. W. W.	3	¼	1¼	1¾	V	12	1¾	11	1¾	37	2	F	49	2½	¼	2	47	1½	⅜	2	89	32
Hall 2-Worm-2½	3	⅛				8	1¼	12½	1¼	32	1¼	F	11½	3	¼	4	11½	3	¼	4	144	38
Hall 3½-Worm	3	⅛				12½	1¾	15½	1¾	38⅛	1½	F	15	3¾	¼	4	15	3¾	¼	4	180	39
Hall 5-Worm	3	⅛				12½	1¾	15½	1¾	38⅛	1½	F	18	4	¼	4	18	4	¼	4	144	39
Hall 7-Chain	3	⅛				12½	1¾	15½	1¾	38⅛	1½	F	18	4	¼	4	18	4	¼	4	144	39
Hendrickson 1-2½	3	¼	1¼	⅛									12	3½	⅛	4	12	3½	⅛	4	Opt	32¼
Hendrickson J-3½	3	¼	1¼	⅛									16	3¾	⅛	4	16	3¾	⅛	4	Opt	36
Hendrickson K-5	3	¼	1½	⅛									18	4	⅛	4	18	4	⅛	4	Opt	38
Highway Knight A	3	¼	1	1		14	2¾	10	2¾	53	⅝	V	57	2½	¼	2	57	2½	¼	2	147	38
Highway Knight B-5	3	¼	1	1		14	2¾	10	2¾	53	⅝	V	69	3	¼	2	69	3	¼	2	147	38
Higrade A18-1—1918–19	3	⅛	1	1	V	9	2	7	2	32	½	R	12	1½	¼	2	12	1½	¼	2	85	32
Higrade B20-1½—1919–20	3	⅛	1⅛	1⅛	V	9	2	7	2	32	½	R	18	2	¼	2	18	2	¼	2	100	32
Hurlburt A1½-2	3		1¼	1									22	2	¼	2	22	2	¼	2	132	35½
Hurlburt B2½	3	⅛	1¼	1									24	2½	¼	2	23	2½	¼	2	154	34
Hurlburt C3½-4	3	¼	1½	1¼									26	3	¼	2	25	3	¼	2	144½	34
Hurlburt D5-5½	3	¼	1½	1¼									28	3	¼	2	27	3	¼	2	144½	34
Huron-Erie 1½	4		1	1½									15	3	¼	2	50	2	⅛	2	121	33
Huron-Michigan 2½	4		1¼	1									15	3	¼	2	50	2½	⅛	2	145	33
Indiana 12-1½—1921	3	¼	1			17	1¼	14	1¼	38½	1		17½	2	⅛	4	17½	2	⅛	4	108	32
Indiana 20-2—1921	3	¼	1¼			6	1¼	13	1¼	26⅝	1½		44	2	¼	2	44	2	¼	2	126	33
Indiana 25-2½—1921	3	¼	1¼			6	1¼	13	1¼	26⅝	1½		51	2¼	¼	2	51	2¼	¼	2	138	33
Indiana 35-3½—1921	3	¼	1¼			6	1¼	13	1¼	26⅝	1½		56	2½	¼	2	56	2½	¼	2	144	34½
Indiana 51-5—1921	3	¼	1½			10	1½	17½	1½	26⅝	1½		68	3	¼	2	68	3	¼	2	156	37½
International S-1500 lbs.–Speed Truck '21	3	¼	1¼	1¼	V	9¾	2¼	17¾	2¼	30¼	1	F	38	2	⅛	2	36	2	⅛	2	90	34
International 21-2000 lbs.—1916–21	3	¼	1¼	1¾	V	6	1½	3½	1⅛	38⅛	1⅛	F	43¾	2¼	⅛	2	43¾	2¼	⅛	2	75	34
International 31-3000 lbs.—1916–21	3	¼	1¼	1¾	V	6	1½	3½	1⅛	38⅛	1⅛	F	43¾	2¼	⅛	2	43¾	2¼	⅛	2	106½	34
International 41-4000 lbs.—1918–21	3	¼	1¼	1¾	V	6	1½	3½	1⅛	38⅛	1⅛	F	50⅝	2¼	⅛	2	50⅝	2¼	⅛	2	111	32¼
International 61-6000 lbs.—1918–21	4	¼	1¼	1¾	V	9	2¼	14½	2				50⅝	2¼	⅛	2	50⅝	2¼	⅛	2	118	34
International 101-10,000 lbs.—1920-21	4	¼	1¼	1¾	V	9	2¼	14½	2				73	2½	⅛	2	73	2½	⅛	2	147⅛	34
Jackson B 3½	3	⅛	1¼	1½	V	11				32½	1¼	F	8½	3½	¼	2					150	36
Kalamazoo G-2–1½	3	¼	1	1		15½	1½	8	1½	40	1½	F	50	2½	⅛	1				1	120	32½
Kalamazoo H-2½	3	¼	2	1		20	1¾	19½	1½	42	2	F	90	2½	¼	1	48	2½	¼	1	144	33
Kalamazoo K-3½	3	¼	2	1		20	1¾	19½	1½	42	2	F	60	2½	¼	1	60	2½	¼	1	152	36
Kalamazoo K5-5	3	¼	2	1		20	1⅜	19½	1½	42	2	F	68	3	¼	2	68	3	¼	2	152	36
Kearns H-¾	3	⅛	1	⅛	H	16	2	16	2	33	1	F	42	2	⅛	1	21	2	⅛	2	90	34
Kearns N-1½	3	⅛	1	⅛	H	18	2	18	2	33	1	F	45	2½	⅛	1	22	2¼	⅛	2	120	34
Kelly-Springfield K31 1½	4	¼	1	⅛	V	7	1½	13	1½	54½	1	V	16¾	1⅞	⅛	4	16¾	1⅞	⅛	4	141	34
Kelly-Springfield K34 1½	4	¼	1	⅛	V	7	1½	13	1½	54½	1	V	42⅝	2	¼	2	42⅝	2	¼	2	141	34
Kelly-Springfield K35 2½	4	¼	1	⅛	V	7	1⅛	13	1¾	55½	1	V	16¾	1⅞	⅛	4	16¾	1⅞	⅛	4	141	34
Kelly-Springfield K36 2½	4	¼	1	⅛	V	7	1⅛	13	1¾	55½	1	V	48⅞	2¾	¼	2	48⅞	2¾	¼	2	141	34
Kelly-Springfield K40 3½	4	¼	1¼	⅛	V	7	1⅝	23	1½	62⅛	1	V	21	2⅞	⅛	4	21	2⅞	⅛	4	145	38
Kelly-Springfield K41 3½	4	¼	1¼	⅛	V	7	1⅝	23	1½	62⅛	1	V	3⅛	4½	¼	12	58	2½	⅛	2	144	36
Kelly-Springfield K42 3½	4	¼	1¼	⅛	V	2	1⅝	23	1½	62⅛	1	V	27½	2¾	¼	8	27½	2¾	¼	4	144	36
Kelly-Springfield K 50-5	4	¼	1¼	⅛	V	8	1⅛	23	1⅛	60⅝	1	V	21	2⅞	⅛	4	21	2⅞	⅛	4	145	38
Kelly-Springfield K60-6	4	¼	1¼	⅛	V	8	1⅛	23	1⅛	60⅝	1	V	21	2⅞	⅛	4	21	2⅞	⅛	4	145	38
Keystone 40-2—1919–20	3	¼	1	⅛	V	8	2⅛	8	2⅛	38	1		50½	3	⅛	1	46¾	2	⅛	1	124	33
Kimball AB-2	3	¼	1¼	1¾	V					39	2	F	45	2	¼	2	45	2	¼	2	135	34
Kimball AC-2½	3	¼	1¼	1¾	V					39	2	F	22½	2¼	¼	4	22½	2¼	¼	4	152	34
Kimball AK3	3	¼	1¼	1¾	V					39	2	F	22½	2¼	¼	4	22½	2¼	¼	4	152	34
Kimball AE-4	3	¼	1½	1¾	V					42	2	F	56	2½	¼	2	56	2½	¼	2	171	36
Kimball AF-5	3	¼	1½	1¾	V					42	2	F	69	3	¼	2	69	3	¼	2	171	36
Kissel-1 Ton—1921	3	⅛		1¼		12¼	1¾	10	1½	46¾	2	F	11	3	¼	4	11	3	¼	4	101¼	34
Kissel-Utility 1½—1917–20	3	⅛		1¼		12¼	1¾	10	1½	46¾	2	F	19	2	¼	4	19	2	¼	4	120	34
Kissel-Freighter-2—1917–20	3	⅛		1¼		12¼	1¾	10	1½	49	2	F	14	3½	¼	4	14	3½	¼	4	144	34
Kissel-Heavy-Duty-3½—1917–20	3	⅛		1¼		13¾	1¾	10	1½	52¼	2	F	56	2½	¼	2	56	2½	¼	2	156	36
Kissel-Goliath-5—1919–20	3	⅛		1¼						55	2	F	56	2½	⅛	2	56	2½	⅛	2	168	36
Kleiber 1	3	⅛	1¼	1¾		13	1½	16	1¼	36	¾		12	3½	4	4	12	3½	4	4	120	34
Kleiber 1½	3	⅛	1¼	1¾		13	1½	16	1¼	38	1¼		45	2	4	2	45	2	¼	2	132	34
Kleiber 2	3	⅛	1¼	1¾		13	1½	16	1¼	40	1¼		13½	3½	4	4	13½	3½	¼	4	144	34
Kleiber 2½	3	⅛	1¼	1¾		13	1¾	16	1¼	40	1¼		52	2¼	4	2	52	2¼	¼	2	150	34
Kleiber 3½	3	⅛	1¼	1¾		13	1¾	16	1¼	40	1¼		16	3¾	4	4	16	3¾	¼	4	156	38
Kleiber 5	4	¼	1½	1¾		13	1¾	16	1¼	43	1¼		18	4	4	4	18	4	¼	4	168	38
Koehler D-1½	3	⅛	1	¼	V	9¼	2	12½	2	37½	1¼		40	1¾	⅛	2	40	1¾	¼	2	113¼	34
Koehler M-2½	4	⅛	1¼	¼	V	5¼	1⅝	5¼	1¼	40¼	1¾		13	3½	¼	4	13	3½	¼	4	141¾	34
Koehler MCS-2½	4	⅛	1¼	¼	V	5¼	1⅝	5¼	1¼	40¼	1¾		13	3½	¼	4	13	3½	¼	4	129¾	34
Koehler F-3½	4	⅛	1¼	¼	V	9	1⅝	5¼	1¼				15½	3¾	¼	4	15½	3¾	¼	4	139½	34
Koehler MT 5–Tractor 5	4	⅛	1¼	¼	V	5¼	1⅝	5¼	1¼	40¼	1¾		13	3½	¼	4	13	3½	¼	4		34
Lange B	3	⅛	1	1¼	V	3½	2¼	11	2	36½	⅝	F	30	2	¼	2	18	3	¼	4	114	37
Lange E-2½		¼	1	1⅝	V	9	1½	15½	1½	42	1½	F	18	3½	¼	4	18	3½	¼	4	138	
Larrabee-Deyo U-1½—1919–20	3	⅛	1		V	9	2	9	2	38	⅝	V	48	2	¼	2	48	2	¼	2	108	34
Lar-Deyo A,B 18-19 & L-'20-3½	3	⅛	1¼		V	9	1½	6	1¼	36	1½		60	2½	¼	2	60	2½	¼	2	168	38
Lar.-Deyo C,D'18-19 & K'20-2½	3	⅛	1¼		V	8½	2	17½	2	44	2	F	54	2¼	¼	2	54	2¼	¼	2	150	36
Larrabee-Deyo W-5—1920	3	⅛	1½		V	6	1¼	6	1¼	36	1¼	F	72	3	¼	2	72	3	¼	2	152	36
Larrabee Deyo T--1918–19	3	⅛	1¼		V	9	1½	6	1¼	36	1⅝	F	72	3	¼	2	72	3	¼	2	157	36
Luedinghaus K2—1919–20	3	¼	1¼	1⅛		9	1¼	5	1¼		1½	F	53.4	2½	⅛	2	38½	2½	¼	2	120	34
Luedinghaus K2-LS—1920	3	¼	1¼	1⅛		9	1¼	5	1¼		1½	F	53.4	2½	¼	2	38½	2½	¼	2	145½	34
Luverne BBL-2	3	⅛	1¼	1¼										2½	⅛	2		2½	⅛	2	108	34
Maccar L-1½—1915–20–21	3	⅛	1¼	1⅛	V	3¼	1½	10	1⅛	30¾	¾	F	11⅝	3¼	¼	4	11⅝	3¼	¼	4	128⅛	34
Maccar H-2, 2½—1921	4	¼	1¼	1⅝	V	9½	1½	15½	1½	41½	1½	F	13⅞	3½	¼	4	13⅞	3½	¼	4	141½	34
Maccar HA 1921	4	¼	1¼	1⅝	V	11¾	1½	17	1½	41½	1½	F	13⅞	3½	¼	4	13⅞	3½	¼	4	143⅝	34
Maccar M2-3½–1920–21	4	¼	1¼	1⅝	V	8	1¾	13½	1½	37½	2	F	14¾	3¾	¼	4	14¾	3¾	¼	4	155½	34
Maccar G-5—1919–20–21	3	¼	1½	1⅞	V	10½	2	20½	2	40¾	2	F	18	4	¼	4	18	4	¼	4	166⅝	37½
MacDonald A–7½	4	¼	1¼		V	12	2	21	1¼	35	2	F	70	3	¼	1	34	3	¼	1		
Mack AB1½, 2, 2½-Ton-Chain '16-20	4	⅛	1¼	¼		9½	1½	4¾	1½	33	1½	F	12¼	4	¼	2	16½	2½	¼	4	Opt	33¼
Mack Dual Reduction,1½,2,2½-1921	4	⅛	1¼	¼		9½	1½	4¾	1½	33	1½	F	18¾	3½	¼	4	12	6	¼	2	Opt	33¼
Mack AB-Tractor 5 Ton—16–20	4	⅛	1¼	¼		9½	1½	4¾	1½	33	1½	F	12¼	4	¼	2	16½	2½	¼	4	77	33½
Mack AC 3½ to 7½ ton—'16–20	4	¼	1½	¼		5¾	2¼	4¾	1½		1	V	16½	3	¼	4	20½	3½	¼	4	Opt	37½
Mack AC Trac. 7 to 15 Ton—'16–20	4	¼	1½	¼		5¾	2¼	4¾	1½		1	V	16½	3	¼	4	20½	3½	¼	4	87	37½
Master JI-1½—1919–20	4	¼	1¼	2	H	13½	2	12½	1¼	30½	1	F	74½	2½	⅛	1	74½	2½	¼	1	117¾	34¼
Master JW-1½—1919–21	4	¼	1¼	2	H	13½	2	12½	1¼	30½	1	F	12	3¼	¼	2	12	3¼	¼	2	117¾	34½
Master M-2½—1916–20	4	¼	1¼	2	H	13½	2	12½	1¼	33	1¼	F	74½	2½	⅛	1	74½	2¼	¼	1	117⅜	34
Master O 2½—1917–20	4	¼	1¼	2	H	13½	2	12½	1¼	33	1¼	F	74½	2½	⅛	1	74½	2¼	¼	1	156¾	34

Replacement Table—Continued

Name, Model and Tonnage	ENGINE												BRAKE LINING								FRAME	
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length	Width
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Over All
Master W-2½—1916–21	4	¼	1¼	2	H	13½	2	12½	1¼	31	1¼	F	13¼	3½	¾	2	13¼	3½	¼	2	117⅜	34
Master WL 2½—1917–21	4	¼	1¼	2	H	13½	2	12½	1¼	31	1¼	F	13¼	3½	¾	2	13¼	3½	¾	2	156⅜	34
Master D-2½—1920–21	4	¼	1¼	2	H	13½	2	12½	1¼	35	1¼	F	8⅝	4½	⅞	2	54 ⅞	3	⅞	2	117⅜	34
Master DL-2½—1920–21	4	¼	1¼	2	H	13½	2	12½	1¼	35	1¼	F	8⅝	4½	⅞	2	54 ⅞	3	⅞	2	156⅜	34
Master T-6 Tractor—1917–21	4	¼	1¼	2	H	13½	2	12½	1¼	33	1¼	F	74½	2½	⅛	1	74½	2¼	¼	1	72⅛	34
Master A-3½—1918–21	4	¼	1½	1¾	H	13½	2	15	1¼	35	2	F	16	3¾	¼	2	16	3¾	¼	2	147¾	36¾
Master AL-3½—1918–21	4	¼	1½	1¾	H	13½	2	15	1¼	35	2	F	16	3¾	¼	2	16	3¾	¼	2	183¾	36¾
Master E-3½—1920–21	4	¼	1½	1¾	H	13½	2	15	1¼	35	2	F	11	6	¼	2	25	4	¼	4	147¾	36¾
Master EL-3½—1920–21	4	¼	1½	1¾	H	13½	2	15	1¼	35	2	F	11	6	¼	2	25	4	¼	4	183¾	36¾
Master-B 5—1919–21	4	¼	1½	1¾	H	13½	2	15	1½	37	2	F	18	4	¼	2	18	4	¼	2	162⅞	39
Master BL-5—1919–21	4	¼	1½	1¾	H	13½	2	15	1½	37	2	F	18	4	¼	2	18	4	¼	2	186⅞	39
Master F-5—1920–21	4	¼	1½	1¾	H	13½	2	15	1½	37	2	F	11	6	¼	2	25	4	¼	4	162⅞	39
Master FL-5—1920–21	4	¼	1½	1¾	H	13½	2	15	1½	37	2	F	11	6	¼	2	25	4	¼	4	186⅞	39
Maxwell 1½—1917–20	3	⅛	1	1	V	6¾	2⅛	7¾	2⅛	44½	1½	....	16	1¾	⅛	4	16	1¾	⅛	4	102	36
Menominee HT-1—1918–20	3	¼	1	1½	....	....	....	....	....	....	....	....	12	3¼	¼	8	.....	.....	.....	.....	104	32
Menominee H-1½—1916–20	3	¼	1¼	1¾	....	....	....	....	....	....	....	....	13½	3½	¼	8	.....	.....	.....	.....	122	32
Menominee D-2—1915–20	3	¼	1¼	1¾	....	....	....	....	....	....	....	....	13½	3½	¼	8	.....	.....	.....	.....	146	32
Menominee G-3½—1916–20	3	¼	1½	2	....	....	....	....	....	....	....	....	16	3½	¼	8	.....	.....	.....	.....	149	36
Menominee J-5—1917–20	3	¼	1½	2	....	....	....	....	....	....	....	....	18½	4	¼	8	.....	.....	.....	.....	149	38
Menominee Ht-1—1920-late	3	¼	1	1½	....	9¼	1¾	10½	1¼	33¾	1¼	F	47⅛	2½	⅛	2	33¼	2½	⅛	2	102¾	32
Menominee H-1—1920-late	3	¼	1	1¾	....	9¾	1¾	10½	1¼	33¾	1¼	F	47⅛	2½	⅛	2	33¼	2½	⅛	2	124	32
Menominee D-2—1920-late	3	¼	1¼	1¾	....	3	1¾	3	1½	37¾	2	F	57½	2½	⅛	2	42½	2½	⅛	2	131½	32
Menominee G-3½—1920–late	3	¼	1¼	1¾	....	3	1¾	3	1½	37¾	2	F	57½	2½	⅛	2	42½	2½	⅛	2	149	36
Menominee J-5—1920 late	3	¼	1½	2	....	3	1¾	3	1¾	40¾	2	F	69⅛	3½	⅛	2	52	2½	⅛	2	149	38
Moline 10	3	⅛	....	1¼	H	10½	2¼	4½	2¼	.....	2	F	21	2½	⅛	2	20	2	⅛	2	108	32
Moreland 21B-1½—1919–20–21	3	⅛	1¼	1½	H	9	1½	13	1½	42	1½	F	12	3¼	¼	4	12	3¼	¼	4	132	34
Moreland 21C-2½—1919–20–21	3	⅛	1¼	1½	H	9	1½	13	1½	42	1½	F	13½	3½	¼	4	13½	3½	¼	4	156	34
Moreland 21H-4—1919–20–21	3	¼	1½	1¾	H	9	2	19	2	42	2	F	16	3¾	¼	4	16	3¾	¼	4	168	38
Moreland 21J-5—1919–20–21	3	¼	1½	1¾	H	9	2	19	2	42	2	F	18	4	¼	4	18	4	¼	4	168	38
Napoleon 9-1—1919–20	3	⅛	1	⅛	V	6	2¼	12	2	36	1	F	44	2	⅛	1	30	2½	⅛	1	101	35⅜
Napoleon 11-1½—1919–20	3	⅛	1	⅛	V	6	2¼	12	2	36	1	F	49	2	⅛	1	30	2½	⅛	1	101	35⅜
Nash 2018-1—1919–20	4	¼	1¼	1¼	....	3	1½	7¾	1¼	36	1	F	49⅛	2	⅛	2	20 ⅛	2½	⅛	1	104½	30½
Nash 3018-2—1919–20	4	¼	1¼	1¼	....	3	1½	.....	.....	44	1	F	50⅝	3	⅛	2	20 ⅛	2½	⅛	1	118¼	31½
Nash 4017-2—1919–20	3	¼	1¼	1¼	....	7	1½	.....	.....	44	2	F	49¼	2½	¼	4	25 ⅛	2½	¼	1	117⅛	38½
Nelson & LeMoon G 1½	4	¼	1¼	⅛	....	....	....	....	....	....	....	....	12	3¼	¼	2	12	3¼	¼	2	Opt	.....
Nelson & LeMoon G 2½	4	¼	1¼	⅛	....	....	....	....	....	....	....	....	12	3¼	¼	2	12	3¼	¼	2	Opt	.....
Nelson & LeMoon G 3½	4	¼	1¼	⅛	....	....	....	....	....	....	....	....	16½	3¾	¼	2	16½	3¾	¼	2	Opt	.....
Nelson & LeMoon G 5	4	¼	1½	⅛	....	....	....	....	....	....	....	....	18	4	¼	2	18	4	¼	2	Opt	.....
Netco DK-2	3	⅛	1¼	1⅛	V	6½	1½	13½	1¼	40 ⅛	1½	F	13	3½	¼	4	13	3½	¼	4	108½	34¼
Netco HL-2½–3	3	⅛	1½	1⅛	V	9	1½	16	1¼	41¼	1½	F	13	3½	¼	4	13	3½	¼	4	195½	34¼
Niles E-2	3	⅛	1¾	1¾	V	8	1¼	11	1¼	30	¾	F	12	3¼	¼	2	12	3¼	¼	2	147	56
Noble B30-1½—1918–20	4	⅛	1	1⅛	....	16½	1¼	7	1⅞	34¼	1⅛	....	43	2	¼	2	43	2	¼	2	136	34
Noble C40-2—1919–20	4	¼	1¼	1⅛	....	12	1¼	9	2	34¼	1⅛	....	43	2	¼	2	43	2	¼	2	148	34
Noble D50-2½—1919–20	4	¼	1¼	1⅛	....	12	1¼	9	2	34¼	1⅛	....	51	2¼	¼	2	51	2¼	¼	2	172	34
Noble E70-3½—1919–20	4	¼	1¼	1⅛	....	16	1¼	14½	2	34¼	1⅛	....	57	2½	¼	2	57	2½	¼	2	172	36
Northway B-2	3	⅛	1	1¾	V	5¼	2¼	13⅞	1¼	31	⅝	V	50½	2¼	¼	2	50½	2¼	¼	2	118	33
Northway B-3	3	⅛	1	1¾	V	5¼	2¼	13⅞	1¼	31	⅝	V	54	2½	¼	2	54	2½	¼	2	173	34½
Norwalk 25E–1	3	⅛	1	⅛	V	9	2¼	19	2¼	29	¾	F	16½	2¼	⅛	2	16½	1½	⅛	2	100	36
Norwalk 35E–1½	3	⅛	1	⅛	V	9	2¼	19	2½	29	¾	F	16½	2¼	⅛	2	16½	1½	⅛	2	124	34
Norwalk 35E Spec.–1½	3	⅛	1	⅛	V	11	2	18	1½	36	2	F	19	2	¼	2	19	2	¼	2	124	34
Ogden D–1½	....	....	1	1	....	13	2	12	2	36	¾	F	.....	.....	.....	.....	.....	.....	.....	.....	120	.....
Ogden E–2½	....	....	1¼	2	....	10	1 ⅛	14	1 ⅛	30	1¼	F	.....	.....	.....	.....	.....	.....	.....	.....	144	.....
Ogden F–3½	....	....	1¼	2	....	11	1½	16	1½	36	1½	F	.....	.....	.....	.....	.....	.....	.....	.....	168	.....
Ogden G–5	....	....	1½	3	....	9	2	18	2	40	2	F	.....	.....	.....	.....	.....	.....	.....	.....	168	.....
O. K.-1½—1920	4	¼	1¼	1 ⅛	V	12	2	13½	1¼	36	2	F	53	2½	⅛	2	38	2½	⅛	2	117	34
O. K.-2½—1920	4	¼	1¼	1 ⅛	V	12	2	13½	1¼	36	2	F	62	2½	⅛	2	48	2½	⅛	2	121	35
O. K. 3½—1920	4	¼	1¼	1 ⅛	V	12	2	13½	1¼	38	2	F	62	2½	⅛	2	48	2½	⅛	2	133	34
Old Reliable A-1½—1918–20-21	3	¼	1¼	1¼	....	.....	.....	.....	.....	.....	.....	....	48	2½	¼	1	48	2½	¼	1	105	32
Old Reliable B-2½—1918–20-21	3	¼	1¼	1¼	....	.....	.....	.....	.....	.....	.....	....	54	2	¼	1	54	2	¼	1	144	32
Old Reliable C-3½—1918–20-21	3	¼	1¼	1¼	....	.....	.....	.....	.....	.....	.....	....	60	2½	¼	1	60	2½	¼	1	150	32
Old Reliable D-5—1918–20-21	3	¼	1½	1½	....	.....	.....	.....	.....	.....	.....	....	72	3	¼	1	72	3	¼	1	156	34
Old Reliable K. L. M.-7—1918-20-21	3	¼	1½	1½	....	.....	.....	.....	.....	.....	.....	....	54	3½	¼	1	60	4	¼	1	158	36
Oldsmobile T-1—1921	3	⅛	1 ⅛	1⅜	V	5	1¼	11	1¼	32⅜	.....	V	42¼	2	⅛	1	41 ⅛	2	⅛	1	92⅝	34
Olympic 2½	3	¼	1¼	1½	V	13	2	12	1¼	34	2	F	13½	3½	⅛	2	13½	3	⅛	2	Opt	32½
Packard EC	3	¼	1⅝	1¾	V	6¼	1½	10⅜	1½	41 ⅛	¾	V	7 ⅛	4¾	¼	2	14	2	⅛	4	132	31¾
Packard ED	3	¼	1⅝	1¾	V	6¼	1½	10⅜	1½	43 ⅛	¾	V	9 ⅛	4¾	¼	2	17	3	⅛	4	144	39
Packard EF	3	¼	1⅝	1¾	V	6¼	1½	10⅜	1½	43 ⅛	¾	V	9 ⅛	6½	¼	2	18¾	3½	⅛	4	144	39
Packard EX	3	¼	1⅝	1¾	V	6¼	1½	10⅜	1½	43 ⅛	¾	V	9 ⅛	6½	¼	2	14	2	⅛	4	132	31¾
Paige 54-20-2½	3	¼	....	1¼	....	10½	1½	10½	1½	37⅝	1¼	F	49⅝	2¼	¼	2	49⅝	2¼	¼	2	126	33
Paige 51-18-3½	3	¼	....	1¼	....	13	1½	13	1½	37⅝	2	F	15⅝	3¾	¼	4	15⅝	3¾	¼	4	144	35
Paige 52-19-1½	3	⅛	....	1¼	....	8	1¼	12	1¼	36	2	F	11½	3¼	¼	4	11½	3¼	¼	4	126	33
Parker F20-2—1920	3	¼	1¼	1½	V	19	1¾	16½	1½	38	2	F	10¾	5	¼	2	19	2½	¼	4	127	33
Parker J20-3½—1920	3	¼	1¼	1½	V	19	1¾	16½	1½	38	2	F	10¾	5	¼	2	19	3½	¼	4	139½	33
Parker M20-5—1920	3	¼	1½	1¾	V	14	1¾	18	1¾	39½	2	F	10¾	5	¼	2	24½	4	¼	4	145	37
Pierce Arrow-2-X-5	3	⅛	1	1⅜	V	16⅜	2	14¼	1⅜	43½	1½	F	22¼	2¼	¼	4	22¼	2¼	¼	4	125 ⅛	34½
Pierce Arrow-3½-W-2	3	⅛	1	1⅞	V	11	2	15½	1¾	43½	1½	F	9	6	¼	2	18	4¾	¼	4	133¼	38½
Pierce Arrow-5-R-10	3	⅛	1	1⅞	V	11	2	15½	1¾	43½	1½	F	9	6	¼	2	20⅞	4¾	¼	4	139¼	38½
Pittsburgher 2½—1919–20	3	⅛	1¼	1¼	V	6	1½	12	1¼	37	1	F	52	2¼	¼	2	52	2¼	¼	2	136	33
Pioneer 59AA–1	3	⅛	1¼	1½	V	13	2	12	2	35	1	F	14	1¾	⅛	4	14	1¾	⅛	4	102	30
Rainier R-8-2	3	⅛	1 ⅛	⅛	V	5	1½	13	1½	31½	1¼	F	44½	2	¼	1	44½	2	¼	1	.....	34
Rainier R6-1½	3	⅛	1 ⅛	⅛	V	9¾	1½	14¾	1½	41	1½	F	19	2	¼	2	19	2	¼	2	113	34
Rainier R-19-1	3	⅛	1 ⅛	⅛	V	8½	1½	14	1½	41	1½	F	19	2	¼	2	19	2	¼	2	100	34
Rainier R11-¾	3	⅛	1 ⅛	⅛	V	9	1½	14½	1½	42	1½	F	11¼	3	¼	2	11¼	3	¼	2	90	34
Ranger TK-22-2	3	¼	1 ⅛	1½	H	11¾	1 ⅛	10	1¼	33¾	1	F	11½	3¼	⅛	2	11½	3¼	⅛	2	106½	33
Reliance 10A-1½—1920–21	4	¼	1¼	⅜	V	10½	2	13½	1⅜	35	2	F	17	2	⅛	4	17	2	⅛	4	122	32
Reliance 20B-2½—1920–21	4	¼	1¼	⅜	V	10½	2	13½	1⅜	35	2	F	17	2	⅛	4	17	2	⅛	4	127	32
Reo F—1500-2500-lbs	3	⅛	1	1	V	5½	1	5½	1	39 ⅛	⅞	F	43	2¼	⅛	1	39½	2	⅛	1	82	30
Republic 10-1-10E-1-1919–20–21	3	⅛	1	....	V	12¼	2	6	2	40 ⅛	1¼	F	21¼	2½	⅛	4	19¾	2¼	⅛	4	.....	34
Republic 11X-1½—1919–20–21	3	⅛	1	....	V	12¼	2	6	2	40 ⅛	1¼	F	25¼	2½	⅛	4	24¼	2¼	⅛	2	118	34
Republic 19-2½—1919–20–21	3	⅛	1¼	....	V	8	1½	11¾	1¼	32 ⅛	1¼	F	25¼	2½	⅛	4	24¼	2¼	⅛	2	121	34
Republic 20-3½—1919–20–21	3	⅛	1¼	....	V	7¼	1¾	5½	1¼	36¼	1½	F	55¾	3½	⅛	2	30 ⅜	4½	⅛	1	146	37
Republic 75–¾—1921	3	⅛	1	....	V	12	2¼	18½	2¼	31 ⅜	1	F	19	2	⅛	4	18	2	⅛	4	95	31
Riker B3, BB-4	4	¼	....	....	V	9¾	1⅝	8	1¼	49½	1¼	V	7¼	4½	⅛	2	20	4	⅛	4	150	38
Rowe CW-1½—1918–19–20	3	¼	1¼	....	....	10½	1¾	10½	1½	32½	1⅛	F	19	2	¼	8	19	2	¼	8	113	33
Rowe CDW2—1916–20	3	¼	1¼	⅛	....	10½	1¾	10½	1½	32½	1⅛	F	45	2	¼	4	45	2	¼	4	123	33
Rowe GSW3—1918–20	3	¼	1¼	⅛	....	20	1¾	15½	1½	36¼	2	F	51½	2½	¼	4	51½	2½	¼	4	140	33
Rowe HW4—1918–20	3	¼	1¼	⅛	....	20	1¾	15½	1½	36¼	2	F	56½	2½	¼	4	56½	2½	¼	4	146	36
Rowe FW5—1914–20	3	¼	1¼	⅛	....	20	1¾	15½	1½	36¼	2	F	68	3	⅛	4	68	3	⅛	4	153	38½
Rowe GPW3—1916-17, 1919–20	3	¼	1¼	⅛	....	10	1½	6	1¾	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	152	33
Rumely A–1½	4	⅛	1 ⅛	1 ⅛	V	10½	1¾	10½	1¼	37	2	F	18	2	⅛	4	18	2	⅛	4	122	34
Samson 15–¾	3	⅛	1 ⅛	1⅝	V	6½	1¼	7¾	1¼	35 ⅜	⅜	V	37	2	⅛	1	35¾	1¾	⅛	1	108¼	39½

Replacement Table—Continued

Name, Model and Tonnage	ENGINE												BRAKE LINING								FRAME	
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length	Width
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Over All
Samson 25-1¼	3	⅛	1⅛	1⅜	V	6½	1¼	7¾	1¼	37 11/16	11/16	V	43⅜	2	⅛	1	37 ⅛	1¾	⅛	1	108¼	39½
Sandow G-1—1918-20	3	⅛	1	⅛	....	.....	.....	.....	.....	.....	.....	...	20	2	⅛	2	20	2	⅛	2	96	34
Sandow CG-1½1918—20	3	⅛	1	⅛	....	.....	.....	.....	.....	.....	.....	...	20	2	⅛	2	20	2	⅛	2	120	34
Sandow I-2—1918-20	3	⅛	1	⅛	....	.....	.....	.....	.....	.....	.....	...	60	3	⅛	1	60	3	⅛	1	132	32
Sandow J-2½—1918-20	3	⅛	1¼	⅛	....	.....	.....	.....	.....	.....	.....	...	13½	3½	¼	2	16	3½	¼	2	144	32
Sandow L-5—1918-20	3	⅛	1¼	⅛	....	.....	.....	.....	.....	.....	.....	...	24	4½	¼	2	24	4½	¼	2	144	37
Sandow M-3½—1918-20	3	⅛	1¼	⅛	....	.....	.....	.....	.....	.....	.....	...	18½	4	¼	2	18½	4	¼	2	144	37
Sanford 25-2½—1917-20	3	⅛	1¼	1¼	....	.....	.....	.....	.....	.....	.....	...	51½	2¼	¼	2	51½	2½	⅛	2	144	35
Sanford W35-2½—1917-20	3	⅛	1¼	1¼	....	.....	.....	.....	.....	.....	.....	...	56	2½	¼	2	56	2½	⅛	2	145	35
Sanford W50-5—1917-20	3	1/16	1¼	1¼	....	.....	.....	.....	.....	.....	.....	...	69	3	¼	2	69	3	⅛	2	145	35
Schacht F-2	4	1/16	1¼	2	H	11	2	14	1¼	37½	2	F	8¼	3	¼	4	13½	3	¼	4	140	35⅜
Schacht F-3	4	1/16	1¼	2	H	11	2	14	1¼	37½	2	F	8¼	3	¼	4	13½	3	¼	4	140	35⅜
Schacht E-4	4	1/16	1¼	2	H	10½	2	13½	1¼	39¼	⅞	V	8¼	3	¼	4	15	4	⅜	4	152	35¾
Schacht E-5	4	1/16	1¼	2	H	10½	2	13½	1¼	39¼	⅞	V	8¼	3	¼	4	15	4	⅜	4	152	35¾
Schacht E-7	4	1/16	1¼	2	H	10½	2	13½	1¼	39¼	⅞	V	8¼	3	¼	4	15	4	⅜	4	152	35¾
Schwartz A-1¼—1921	3	⅛	1	⅛	V	9½	2¼	13	2¼	29½	⅞	F	19⅜	1¾	¼	4	19⅜	1¾	¼	4	.....	.....
Schwartz BW-1½	4	1/16	1	⅛	H	10	1¾	18	1¼	33⅛	2	F	19	2	¼	4	19	2	¼	4	120	34
Schwartz CWS-CW-CWL-2¼	4	1/16	1¼	⅛	H	10½	2	15	1¼	33½	2	F	48	2¼	¼	2	48	2¼	¼	2	.....	36
Schwartz DWS-DW-DWL-5	4	1/16	1½	⅛	H	12½	2	17	1¼	38⅜	2	F	69½	3	¼	2	69½	3	¼	2	.....	36
Selden 1½A—1919-20	3	⅛	1	1⅛	V	12	2	.....	.....	41	1¼	F	11⅛	3¼	¼	4	11⅛	3¼	¼	4	114	34
Selden 2½A—1920	3	⅛	1	1⅛	V	3¾	1¼	12	1¼	31	1½	F	13	3½	¼	4	13	3½	¼	4	134	34
Selden 3½A—1919-20	3	⅛	1¼	1⅛	V	9	1⅜	5½	1¾	34¼	2	F	15⅝	3¾	¼	4	15⅝	3¾	¼	4	153	37½
Selden 5A—1920	3	¼	1½	1⅛	V	7	2	20½	2	40⅜	2	F	17 11/16	4	¼	4	17 11/16	4	¼	4	153	37¼
Service 12-¾-1922	3	.....	.....	.....	.....	13½	2½	14½	2½	.....	.....	F	.....	.....	.....	.....	.....	.....	.....	.....	101½	37 ⅛
Service 15-1921-¾	3	⅛	1⅛	1⅛	V	10	1¾	2	1¼	35	2	F	19⅜	1¾	⅛	4	19⅜	1¾	⅛	4	101½	37⅛
Service 220-1—1919-20	3	⅛	1⅛	1⅛	H	10	2	6	1¾	37¾	1	F	12	3¼	¼	2	12	3¼	¼	2	109½	34
Service 31-1½—1919-20	4	¼	1⅛	1 11/16	V	10	2	8	1¼	33	1¼	F	12	3¼	¼	2	12	3¼	¼	2	121 ⅛	34
Service 36-1½—1919-20	4	¼	1⅛	1 11/16	V	10	2	8	1¼	33	1¼	F	12	3¼	¼	2	12	3¼	¼	2	121 ⅛	34
Service 51-2½—1919-20	4	¼	1⅛	1 11/16	V	10	2	8	1¼	33	1¼	F	13½	3½	¼	2	13½	3½	¼	2	131½	34
Service 71-3½—1919-20	4	¼	1 11/16	1⅛	V	10	2	8	1¼	33	1¼	F	16	3¾	¼	2	16	3¾	¼	2	150¼	38
Service 76-3½—1919-20	4	¼	1 11/16	1⅛	V	10	2	10	1¼	38¼	1½	F	16	3¾	¼	2	16	3¾	¼	2	145¾	38
Service 101-5—1919-20	4	¼	1 11/16	1⅛	V	10	2	10	1¼	38¼	1½	F	18½	4	¼	2	18½	4	¼	2	145¾	38
Signal NF-1	4	⅛	1	1⅛	....	7¼	1½	12	1½	39¾	1¼	....	11	3	¼	4	11	3	¼	4	120	.....
Signal H 1½	3	⅛	1⅛	1 11/16	....	8	1½	9	1¼	30½	1¼	....	12	3¼	¼	2	12	3¼	¼	2	120	34
Signal J-2½	3	⅛	1⅛	1 11/16	....	10	1½	12	1¼	30½	1¼	....	13½	3½	¼	2	13½	3½	¼	2	126	34
Signal M 3½	3	⅛	1⅛	1 11/16	....	5½	1½	12	1¼	34¼	1¼	....	16	3¾	¼	2	16	3¾	¼	2	168	38
Signal R-5	3	¼	1⅝	1⅛	....	8	2	16	2	41	2	....	18	4	¼	2	18	4	¼	2	172	38
Standard I-K-1-1½	3	⅛	1	1⅛	V	10½	2⅛	13½	1⅛	39¼	1¼	F	10⅞	3	¼	4	10⅞	3	¼	4	120	32
Standard 76-2½-3	3	⅛	1¼	1⅛	V	.....	1⅞	12	1⅝	31¾	1¼	F	13⅛	3½	¼	4	13⅛	3½	¼	4	122	32
Standard 66-3½—4	3	⅛	1¼	1⅛	V	12	2⅜	18	1⅝	36½	1½	F	15⅝	3¾	¼	4	15⅝	3¾	¼	4	144	38
Standard 5K-5-7	3	¼	1½	1 11/16	V	8	2⅜	3½	2⅜	42¼	2	F	17 11/16	4	¼	4	17 11/16	4	¼	4	144	38
Sterling 1½—1920–21	3	¼	1¼	¼	V	11	1½	19	1½	38	1½	F	11¾	3¼	¼	4	11¾	3¼	¼	4	120	33½
Sterling 2—1920–21	3	¼	1¼	¼	V	11	1½	19	1½	38	1½	F	13¾	3½	¼	4	13¾	3½	¼	4	120	33½
Sterling 2½—1920–21	3	¼	1¼	¼	V	11	1½	19	1½	38	1½	F	13⅜	3½	¼	4	13⅜	3½	¼	4	138	34
Sterling 3½—1920–21	3	¼	1½	¼	V	14⅝	1½	22	1½	40½	1½	F	15¾	3¾	¼	4	15¾	3¾	¼	4	144	38
Sterling 5-Worm—1920–21	3	¼	1½	¼	V	11	1½	19	1½	40½	1½	F	17 11/16	4	¼	4	17 11/16	4	¼	4	158	38
Sterling 5-Chain—1920–21	3	¼	1½	¼	V	11	1½	19	1½	40½	1½	F	56½	3½	¼	2	34 11/16	4	¼	1	158	38
Sterling 7½—1920–21	3	¼	1½	¼	V	11	1½	19	1½	40½	1½	F	56½	3½	¼	2	34 11/16	4	¼	1	158	38
Stewart M7-2—1918–20	3	⅛	.....	1⅛	.....	.....	.....	.....	.....	.....	.....	...	50⅝	2	⅛	2	8	5	⅛	2	132¾	32
Stewart M15-1—1920	3	⅛	.....	1	.....	.....	.....	.....	.....	.....	.....	...	41⅜	2	⅛	2	22¾	2	⅛	1	99½	32
Stewart M9-1½—1918–20	3	⅛	.....	1	.....	.....	.....	.....	.....	.....	.....	...	48½	2	⅛	2	8	5	⅛	2	119¼	32
Stewart M10-3½—1918–20	3	⅛	.....	1⅜	.....	.....	.....	.....	.....	.....	.....	...	60	3	⅛	2	8	5	⅛	2	139¾	32
Stewart M7X—1920	3	¼	.....	1⅛	.....	.....	.....	.....	.....	.....	.....	...	50⅝	2	⅛	2	8	5	⅛	2	132¾	32
Stewart M10X—1920	3	¼	.....	1⅜	.....	.....	.....	.....	.....	.....	.....	...	60	3	⅛	2	8	5	⅛	2	138	32
Stoughton A-1	4	¼	1	1⅜	V	18	1¼	15	1¼	38½	1¼	F	16	1¾	¼	4	16	1¾	¼	4	88	34
Stoughton B-1½	4	¼	1	1⅜	V	18	1¼	15	1¼	39¼	1½	F	19	2	¼	4	19	2	¼	4	116	34
Stoughton D-2	4	⅛	1¼	1⅝	V	8½	1½	15	1½	42	2	F	45	2	¼	2	45	2	¼	2	116	34
Stoughton F-3	4	⅛	1¼	1⅝	V	9½	1¾	15	1¼	42	2	F	52	2¼	¼	2	52	2¼	¼	2	127	36
Super Truck 50—1920	3	¼	1¼	1 11/16	V	19	1¾	19	1½	37½	1⅞	F	51½	2¼	¼	2	51½	2¼	¼	2	135	34
Super Truck 70—1920	3	¼	1¼	1 11/16	V	18½	1¾	19	1½	37½	1⅞	F	55½	2½	¼	2	55½	2½	¼	2	144	34
Super Truck 100—1920	3	¼	1½	1 11/16	V	6	1¾	19	1¾	42	1⅞	F	68	3	¼	2	51½	3	¼	2	144	34
Superior D-1—1919-20	3	⅛	1⅛	1⅛	....	11	2	10	2	39	1	F	45	2½	⅛	2	44	2¼	⅛	2	97¾	34
Superior E-2—1919-20	3	⅛	1⅛	1 11/16	....	8½	1½	15	1¼	29	1	F	54	2½	⅛	2	53½	2½	⅛	2	114	34
Tiffin GW-1½—1920–21	3	⅛	1¼	1¼	V	.....	.....	.....	.....	.....	.....	...	46	2	¼	1	46	2	¼	1	114	35
Tiffin MW-2½—1920–21	3	⅛	1¼	1¼	V	.....	.....	.....	.....	.....	.....	...	52	2¼	¼	1	52	2¼	¼	1	138½	32¾
Tiffin PW-3½—1920–21	3	⅛	1¼	1¼	V	.....	.....	.....	.....	.....	.....	...	58	2½	¼	1	58	2½	¼	1	151	35½
Tiffin TW-5—1920–21	3	¼	1½	1½	V	.....	.....	.....	.....	.....	.....	...	68	3	¼	1	68	3	¼	1	156	38½
Tiffin UW-6—1920–21	3	¼	1½	1½	V	.....	.....	.....	.....	.....	.....	...	68	3	¼	1	68	3	¼	1	156	38½
Titan 3½—1919	4	¼	1½	1¾	....	.....	.....	.....	.....	.....	.....	...	60	2¼	⅛	2	14	4½	⅛	2	144	34
Titan 5-6—1918–20	4	¼	1½	1¾	....	.....	.....	.....	.....	.....	.....	...	90	2¼	⅛	2	14	4½	⅛	2	144	34
Titan 2½—1920	4	¼	1¼	1¼	....	.....	.....	.....	.....	.....	.....	...	54	2¼	⅛	2	26	4	¼	1	144	32
Tower J-1½—1920	3	⅛	1¼	1¼	....	.....	.....	.....	.....	.....	.....	...	11¾	3¼	¼	4	11¾	3¼	¼	4	135¼	32½
Tower H-2½—1919–20	3	⅛	1¼	1¼	....	.....	.....	.....	.....	.....	.....	...	13⅛	3½	¼	4	13⅛	3½	¼	4	138¾	32½
Tower G-3½—1919–20-21	3	⅛	1½	1½	....	.....	.....	.....	.....	.....	.....	...	15⅝	3¾	¼	4	15⅝	3¾	¼	4	152 11/16	37
Traffic C-4000—1919-20	3	⅛	1	⅛	H	10½	2	10½	2	41¼	1¼	F	43½	2½	⅛	2	38	1¾	⅛	2	120¾	42
Traffic 6000-1921	3	⅛	1	⅛	H	10½	2	10½	2	41¼	1¼	F	.....	.....	.....	.....	.....	.....	.....	.....	120¾	34
Traffic Speedboy-1921	3	⅛	1	1⅛	H	10½	2	10½	2	41¼	1¼	F	43½	2½	⅛	2	38	1¾	⅛	2	120¾	34
Transport 20-1	3	⅛	1	1	V	12	2	12	2	36½	1	F	48½	2	¼	2	46½	1½	⅛	2	101	34
Transport 30-1½	3	⅛	1	1	V	10¾	2	13	2	40⅜	1¼	F	48½	2½	⅛	2	46½	1½	⅛	2	117	34
Transport 50-2½	3	¼	1¼	1¼	V	9¼	2	10	1¼	32¾	2	F	10¼	3½	¼	2	48½	2½	⅛	2	123	34
Transport 70-3½	4	¼	1¼	1¼	V	12	2	16	1¼	35⅞	2	F	11⅞	3	¼	4	58	2½	⅛	2	150	36½
Traylor B-1½	4	¼	1	....	V	.....	.....	.....	.....	38	1	F	50	2	¼	2	50	2	¼	2	117	34
Traylor C-2	4	¼	1¼	....	V	.....	.....	.....	.....	36	2	F	50	2	¼	2	50	2	¼	2	122	34
Traylor D-3	4	¼	1¼	....	V	.....	.....	.....	.....	36	2	F	56½	2¼	¼	2	56½	2¼	¼	2	142	34
Traylor E-4	4	¼	1¼	....	V	.....	.....	.....	.....	37	2	F	59	2½	....	2	59	2½	....	2	165	35
Traylor F-5	4	¼	1¼	....	V	.....	.....	.....	.....	37	2	F	59	2½	....	2	59	2½	....	2	165	35
Triangle AA-¾—1920	3	⅛	1	1	H	17	2	17	2	34	1	F	22	2½	⅛	1	41	2	⅛	2	94	35
Triangle A-1½—1918-20	3	⅛	1	1	V	14	1¼	14½	1¼	39¼	1½	F	7	4	¼	2	49	2	¼	2	126	34
Triangle B-2½—1919-20	3	⅛	1¼	1¼	V	18	1½	18	1½	39½	1½	F	7	4	¼	2	52	3	¼	2	132	34
Triangle C-2—1920	3	⅛	1	1	V	14	1¼	14½	1¼	39¼	1½	F	7	4	¼	2	52	3	¼	2	129	34
Triumph HB-2½	4	¼	....	....	V	9	1¾	17	1⅛	32½	2	F	46	2½	¼	2	32	2½	¼	2	120	34½
Triumph HC-2	4	¼	....	....	V	9	1¾	17	1¼	32½	2	F	46	2½	¼	2	32	2½	¼	2	120	34½
Ultimate A-2—1920	4	¼	1¼	1⅝	V	11	2	8	1¼	34	2	F	45	2	¼	2	45	2	¼	2	126	32¾
Ultimate AJ2—1920	4	¼	1¼	1⅝	V	11	2	8	1¼	34	2	F	45	2	¼	2	45	2	¼	2	126	32¾
Ultimate AJL-2-1920	4	¼	1¼	1⅝	V	11	2	8	1¼	34	2	F	45	2	¼	2	45	2	¼	2	150	32¾
Ultimate B-3—1920	4	¼	1¼	1⅝	V	11	2	8	1¼	34	2	F	51	2¼	¼	2	51	2¼	¼	2	144	32¾
Ultimate BL3—1920	4	¼	1¼	1⅝	V	11	2	8	1¼	34	2	F	51	2¼	¼	2	51	2¼	¼	2	192	32¾
Union F-2½	3	¼	1¼	1¼	V	20	1¾	19½	1½	37¾	2	F	55	3	¼	1	50	2	¼	1	133½	32
Union FW-2½	3	¼	1¼	1¼	V	20	1¾	19½	1½	37¾	2	F	26	4½	¼	1	52	3	¼	1	133½	32
Union H-4	3	¼	1¼	1¼	V	20	1¾	19½	1½	37¾	2	F	56¾	3½	⅛	1	32	4½	⅛	1	157½	34
Union HW-4	3	¼	1¼	1¼	V	20	1¾	19½	1½	37¾	2	F	26	4½	¼	1	24	4	¼	2	157½	34

Replacement Table—Continued

Name, Model and Tonnage	ENGINE											BRAKE LINING								FRAME	
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length	Width
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Over All
Union JW-6	3	1/4	1 1/2	2	V	20	1 3/4	19 1/2	1 1/2	41 1/2	2	F	34	4	1/4	1	28	5	1/4	2	190	36
United 1 1/2	...	...	1	1 1/16	H	15	2 1/2	16	1 1/2	37 1/2	2	F	48	2	1/16	1	48	1 1/2	1/16	1	120	33
United-2 1/2	...	...	1 1/4	1 1/16	H	7	2 1/2	12	1 1/2	37 1/2	2	F	49	3	1/16	1	49	2 1/2	1/16	1	Opt	33
United 3 1/2	...	...	1 1/4	1 1/16	H	7	2 1/2	7	1 1/2	37 1/2	2	F	62	3	1/16	1	58	2 1/2	1/16	1	Opt	34
United 5	...	...	1 1/2	1 1/16	H	14 1/2	2 1/2	12	1 1/2	37 1/2	2	F	88 1/2	2 1/4	1/16	1	88 1/2	2 1/4	1/16	1	Opt	38
U.S.N.-1 1/2	3	1/16	1	1/8	H	11 1/2	2	9	1 1/4	37	1 1/4	F	50	2 1/2	1/8	2	46 1/2	1 1/2	1/8	2	120	34
U.S.R.-2 1/2-3	3	1/16	1 1/4	1/8	V	10	1 1/4	9	1 1/4	35	1 1/4	F	46	2 1/4	1/4	2	46	2 1/4	1/4	2	144	34
U.S.S.-3 1/2-4	3	1/4	1 1/4	1/4	V	9	1 1/2	8	1 1/2	37	1 1/4	F	50	2 1/2	1/4	2	50	2 1/2	1/4	2	156	36
U.S.T.-5-6	3	1/4	1 1/2	1/4	V	15	2	13	1 1/2	38 3/4	2	F	62	3	1/4	4	33	4	1/4	1	168	36
Velie 46-1 1/2—1921	3	1/16	1	1/16	V	9 1/2	2 1/4	12 1/4	1 1/2	40	3/4	V	54 3/16	2 1/2	1/16	2	52 1/16	2 1/4	1/16	2	120	31
Vim 29-1 1/2	3	1/16	7/8	....	....	....	....	....	....	30 3/4	1	F	14 7/8	1 1/2	1/16	4	14 7/8	1 1/2	1/16	4	64	30
Vim 30-1 1/2	3	1/16	7/8	....	....	....	....	....	....	30 3/4	1	F	14 7/8	1 1/2	1/16	4	14 7/8	1 1/2	1/16	4	83 1/2	30
Vim 31-1	4	1/16	1	....	....	....	....	....	....	40	1	F	18	2	1/16	4	18	2	1/16	4	92	32
Vim 22-2	4	1/16	1	....	....	....	....	....	....	40	1	F	42 5/8	2	1/4	2	42 5/8	2	1/4	2	120 5/8	34
Vim 23-3	5	1/16	1 1/4	....	....	....	....	....	....	40	1	F	48 7/8	2 1/4	1/4	2	48 7/8	2 1/4	1/4	2	160 1/16	34
Walker M 1 1/2	...	...	...	....	....	....	....	....	....	....	....	....	43	2 1/4	1/16	2	14	1 3/4	1/16	4	90	32
Walker K1	...	...	...	....	....	....	....	....	....	....	....	....	45 1/2	2 1/2	1/16	2	16	2	1/16	4	96	32
Walker L2	...	...	...	....	....	....	....	....	....	....	....	....	53 1/4	2 1/2	1/16	2	19	2	1/16	4	120	32
Walker P3 1/2	...	...	...	....	....	....	....	....	....	....	....	....	53 1/4	3	1/16	2	19 1/4	2 1/2	1/16	4	140	35
Walker N5	...	...	...	....	....	....	....	....	....	....	....	....	53 1/4	3	1/16	2	19 1/4	2 1/2	1/4	4	162	35
Walker-Johnson B3	4	1/4	1 1/4	1 1/4	....	10	2	8	1 1/4	33 1/2	1 1/4	....	13	3 1/2	1/4	4	13	3 1/2	1/4	4	133	32 1/16
Walter S-5	3	1/4	1/2	2	V	10	1 1/2	18	1 1/2	39	1 1/2	F	15	5	1/4	4	57	2 1/2	1/4	2	150	36
Ward LaFrance 2B-2 1/2-3—1920	3	1/4	1 1/4	1 1/2	V	7	1 1/2	16	1 1/2	41 1/2	1 1/2	F	13	3 1/2	1/4	4	13	3 1/2	1/4	4	137 1/2	33
Ward LaFrance 4A-3 1/2-4—1920	3	1/4	1 1/4	1 3/4	V	8 1/2	1 1/2	18	1 1/2	41 1/2	1 1/2	F	15 1/2	3 3/4	1/4	4	15 1/2	3 3/4	1/4	4	170 1/16	37
Ward LaFrance 5A-5-6—1920	3	1/4	1 1/2	1 3/4	V	9 1/4	1 1/2	18	1 1/2	41 1/2	1 1/2	F	18	4	1/4	4	18	4	1/4	4	170 1/16	37
Watson B1	4	1/4	1	1 3/8	V	16 1/2	1 1/4	4	1 1/4	40	1 1/2	F	41	1 3/4	1/16	2	41	1 3/4	1/16	2	90 1/8	30
Watson N-3 1/2	3	1/4	1 1/2	1 1/4	V	16 1/2	1 1/4	3	1 1/4	34	1 1/4	F	62	2 1/2	1/4	2	47	2 1/2	1/4	2	147	37
Watson U-5	3	1/4	1 1/4	1 1/2	V	16 1/2	1 1/4	3	1 1/4	38 1/2	1 1/4	F	15 1/2	3 3/4	1/4	4	15 1/2	3 3/4	1/4	4	.....	36
White Hickory H-1 1/2—1919	3	1/16	1 1/4	1	....	11	2	8	1 1/4	41	5/8	V	13 1/2	3 1/2	1/4	4	13 1/2	3 1/2	1/4	4	116 1/4	32
White Hickory H-1 1/2—1920	3	1/16	1 1/4	1	....	11	2	8	1 1/4	41	5/8	V	11 3/4	3 1/4	1/4	4	11 3/4	3 1/4	1/4	4	116 1/4	32
White Hickory E-1—1920	3	1/16	1 1/4	1	....	11	2	8	1 1/4	41	5/8	V	11	3	1/4	4	11	3	1/4	4	92 1/4	32 1/16
White Hickory K-2 1/2—1920	3	1/16	1 1/2	1 1/4	....	9	1 1/2	8	1 1/4	33 1/4	1 1/4	F	13 1/2	3 1/2	1/4	4	13 1/2	3 1/2	1/4	4	150	32
Wichita K-1—1915-20-21	3	1/4	1 1/8	1 3/8	V	18 1/2	1 1/4	12	1 1/4	52 3/4	1 1/2	F	19 1/2	2	1/16	4	19 1/2	2	1/16	4	127 1/2	30
Wichita L-1 1/2—1916-20-21	3	1/4	1 1/8	1 3/8	V	18 1/2	1 1/4	12	1 1/4	52 3/4	1 1/2	F	49	2	1/16	2	49	2	1/16	2	127 1/2	30
Wichita M-2—1915-20-21	3	1/4	1 1/8	1 3/8	V	18 1/2	1 1/4	12	1 1/4	52 3/4	1 1/2	F	49	2	1/16	2	49	2	1/16	2	126 1/2	30
Wichita R-2 1/2—1917-20-21	3	1/4	1 1/8	1 3/8	V	18 1/2	1 1/4	12	1 1/4	52 3/4	1 1/2	F	54	2 1/4	1/16	2	54	2 1/4	1/16	2	126 1/2	30
Wichita RX-2 1/2—1919-20-21	3	1/4	1 1/4	1 3/4	V	11	1 1/2	11	1 1/2	40	1 1/2	F	54	2 1/4	1/16	2	54	2 1/4	1/16	2	130	30
Wichita O-3 1/2—1915-20-21	3	1/4	1 1/2	1 3/4	V	11	1 1/2	11	1 1/2	40	1 1/2	F	56 1/2	2 1/2	1/4	2	56 1/2	2 1/2	1/4	2	152 1/2	36
Wichita S-5—1919-20-21	3	1/4	1 1/2	1 3/4	V	11	1 1/2	11	1 1/2	40	1 1/2	F	66	3	1/4	2	66	3	1/4	2	163 1/2	36
Wilcox AA-1—1920	3	1/4	1	....	....	....	....	....	....	....	....	....	47 1/16	2 1/2	1/16	2	33 1/4	2 1/2	1/16	2	96	34
Wilcox B-1 1/2—1920	3	1/4	1 1/4	....	....	....	....	....	....	....	....	....	47 1/16	2 1/2	1/16	2	33 1/4	2 1/2	1/16	2	132	33
Wilcox C-2 1/2—1920	3	1/4	1 1/4	....	....	....	....	....	....	....	....	....	57 1/2	2 1/2	1/16	2	42 1/2	2 1/2	1/16	2	141	33
Wilcox E-3 1/2—1920	3	1/4	1 1/4	....	....	....	....	....	....	....	....	....	57 1/2	2 1/2	1/16	2	42 1/2	2 1/2	1/4	2	156	33
Wilcox F-5—1920	3	1/4	1 1/2	....	....	....	....	....	....	....	....	....	69 3/8	3 1/2	1/4	2	52	3 1/2	1/4	2	148 1/2	36
Wilson 1 1/2—1919-20	4	1/16	....	1	....	....	....	....	....	....	....	....	39 1/2	1 3/4	1/16	2	39 1/2	1 3/4	1/16	2	120	33
Wilson 2 1/2—1919-20	4	1/16	....	1 1/4	....	....	....	....	....	....	....	....	13 3/4	3 1/2	1/16	4	13 3/4	3 1/2	1/16	4	126	33
Wilson 3 1/2—1919-20	4	1/16	....	1 1/2	....	....	....	....	....	....	....	....	16	3 3/4	1/16	4	16	3 3/4	1/16	4	147	38
Wilson 5—1919-20	4	1/16	....	1 1/2	....	....	....	....	....	....	....	....	18	4	1/16	4	18	4	1/16	4	147	38 1/16
Winther 751-1	3	1/4	1	....	H	15 3/4	2	17	2	36 3/16	1	F	42	2	1/16	2	24	2	1/16	1	102	30
Winther 39-1 1/2	3	1/4	1 1/4	....	V	10	1 3/4	4 1/8	1 1/2	33 1/4	1 1/4	F	50	2 1/4	1/4	2	22 1/2	2 1/4	1/4	1	120	30
Winther 430-1 1/2	3	1/4	1 1/4	....	V	11 1/4	1 1/2	11 1/2	1 1/4	30 5/8	1 1/2	F	50	2 1/4	1/4	2	22 1/2	2 1/4	1/4	1	120	30
Winther 49-2	3	1/4	1 1/4	....	V	11 1/2	1 1/2	6 1/2	1 1/2	37 1/2	1 1/4	F	52	3	1/4	2	50	2 1/4	1/4	2	144	33
Winther 450 2 1/2	3	1/4	1 1/4	....	V	11 1/2	1 1/2	6 1/2	1 1/2	37 1/2	1 1/4	F	52	3	1/4	2	22 1/2	2 1/4	1/4	2	120	30
Winther 50-2 1/2	3	1/4	1 1/4	....	V	17 7/8	1 3/4	8	1 1/2	42 1/2	2	F	52	3	1/4	2	50	2 1/4	1/4	2	58	33
Winther 70-3 1/2	3	1/4	1 1/4	....	V	17 7/8	1 3/4	8	1 1/2	42 1/2	2	F	62	3	1/4	2	60	2 1/2	1/4	2	156	33
Winther 109-5	3	1/4	1 1/2	....	V	21 1/2	1 3/4	8	1 1/2	42 1/2	2	F	93	2 1/4	1/4	2	93	2 1/4	1/4	2	156	33
Winther 140-7	3	1/4	1 1/2	....	V	12	1 3/4	6	1 3/4	42 1/4	2	F	93	2 1/4	1/4	2	93	2 1/4	1/4	2	156	33
Wisconsin 2 (Loganville)	3	1/4	1 1/4	1 1/4	H	17	2	17	2	34	1 1/4	F	58	2 1/2	1/16	2	56 1/2	2 1/4	1/16	2	114	34
Wisconsin 2 1/2 (Loganville)	3	1/16	1 1/4	1 1/4	V	12	1 1/2	10	1 1/4	40	3/4	F	58	2 1/2	1/16	2	56 1/2	2 1/4	1/16	2	120	34
Witt Will N-1 1/2—1919-20	3	1/16	1 1/4	1 1/4	V	8	1 1/2	12	1 1/4	31	1 1/4	F	48	3 1/4	1/4	4	48	3 1/4	1/4	4	Opt	32
Witt Will P-2—1919-20	3	1/16	1 1/4	1 1/4	V	8	1 1/2	12	1 1/4	31	1 1/4	F	52	3 1/2	1/4	4	52	3 1/2	1/4	4	Opt	32
Wolverine J 1	3	1/16	1	1 1/4	V	9 1/2	1 1/2	11 1/2	1 1/2	42	1 1/4	F	42 1/2	2 1/2	1/16	2	38	1 3/4	1/16	2	110	34 1/2
Wolverine J 1 1/2	3	1/16	1	1 1/4	V	9 1/2	1 1/2	11 1/2	1 1/2	42	1 1/4	F	51	3	1/16	2	46	2	1/16	2	120	34 1/2
Wolverine J 2	3	1/16	1	1 1/4	V	9 1/2	1 1/2	11 1/2	1 1/2	42	1 1/4	F	51	3	1/16	2	46	2	1/16	2	132	34 1/2
Wolverine K 2 1/2	4	1/16	1 1/4	1 1/4	V	9 1/2	1 1/2	11 1/2	1 1/2	42	1 1/4	F	55	3	1/4	2	47 1/4	2	1/4	2	153	34
Wolverine L 3 1/2	4	1/16	1 1/4	1 1/4	V	9 1/2	1 1/2	11 1/2	1 1/2	44	1 1/2	F	61 1/2	3	1/4	2	58	2 1/2	1/4	2	174	35 1/16
Yellow Cab M21—3/4	3	1/16	1	1/16	V	7 1/2	2	9 5/8	2	38 1/2	3/8	V	49	2 1/2	1/4	2	45	2 1/2	1/4	2	60	43
Yellow Cab M41-1 1/4	3	1/16	1	1/16	V	7 1/2	2	9 5/8	2	38 1/2	5/8	V	11	3	1/4	4	11	3	1/4	4	92	32
Young 5-1	3	1/16	1	....	....	10 1/2	2	9 1/2	2	....	....	....	12	3 1/4	1/16	2	12	3 1/4	1/16	2	109	32
Young 6-2	4	1/4	1 1/4	....	....	7 1/2	1 1/4	11	1 1/4	36	3/4	F	12 1/4	3 1/4	1/4	2	12 1/4	3 1/4	1/4	2	116 1/2	33
Young 7-3 1/2	4	1/4	1 1/2	....	....	9 1/2	1 3/4	11 1/2	1 1/4	38	3/4	V	16	3 1/2	1/4	2	16	3 1/2	1/4	2	183 1/2	36

Parker Appliance Has Bright Outlook

According to announcements made public during an annual meeting held in Cleveland, the Parker Appliance Co., of that city, has shown continued improvement during the past year and will begin its fifth year with every prospect of paying all deferred dividends on its preferred stock and entering the dividend paying class within the next 18 months.

The financing of the corporation will shortly be completed. This will assure ample capital for the extensive operations planned by the management. The company is planning the introduction of compressed air control equipment, including pneumatic clutch and gear control as well as air brake equipment for trucks, passenger cars and trailers. One of the Parker products is a complete line of automotive air compressors particularly suited to the inflation of the larger sized pneumatic truck tires.

Read the February Bus Number

It will help you reap a harvest in a new field during 1922.

Cotta Transmission Company Reorganized

The Cotta Transmission Co., which has been in the receiver's hands for about a year, was purchased by a syndicate of Rockford, Ill., business men and manufacturers, represented by Thomas Swords. A reorganization of the institution was immediately begun. Notices were dispatched to all Cotta customers that the company is out to get all the new business that its plant capacity will permit.

The company makes the Cotta Constant Mesh transmission, which is well adapted for truck usage. The plant has been operating through the period of receivership.

KEY OF ABBREVIATIONS

KEY OF ABBREVIATIONS

Note: Numerals on This Page Correspond With Numerals at Head of Specification Columns on Pages Following. In All Specifications—O, Own; Op or Opt, Optional

Engine:
Beav—Beaver
Bud—Buda
Cont—Continental
Dodge—Dodge Bros.
GBS—Golden, Belknap & Swartz
Gr-B—Gray-Beal
Her—Hercules
Hig—Highway
Hin—Hinkley
1 HSp—Herschell-Spillman
LeR—Le Roi
Lib—Liberty
LMF—Light Mfg. & Fdy.
Lyco—Lycoming
Mid—Midwest
Ster—Sterling
Sup-Supreme
TC—Twin City
Vict—Victory
Wau—Waukesha
Wei.—Weidely
Wis—Wisconsin

Valve Arrangement:
H—Overhead
2 L—ELL-Head
T—TEE-Head
S—Sleeve

How Cooled:
A—Air
3 B—Pump & Thermo
C—Centrifugal
G—Gear Pump
T—Thermo-Syphon

Radiator (Make):
BW—B & W
Brm—Brenem
Bus—Bush
Can—Candler
Chic—Chicago
Eag—Eagle
EM—English-Mersick
Eur—Eureka
Fed—Fedders
4 Flex—Flexo
GO—G. & O.
Har—Harrison
Hoo—Hooven
Idl—Ideal
Jam—Jamestown
Kue—Kuenz
Liv—Livingston
Lng—Long
McC—McCord
May—Mayo
Mod—Modine
Per—Perfex
R-T—Rome-Turney
S-W—Sparks-Withington
Spar—Spartan
Spec—Special
Spli—Splitex
Stan—Standard
Whee—Wheeler

5 Radiator (Type):
C—Cellular
H—Honeycomb
PT—Plain Tube
ZZT—Zig Zag Tube
FIN—Fin Tube

Lubrication:
FS—Force and Splash
6 F—Force Feed
S—Splash

Carburetor:
B&B—Ball & Ball
Bent—Bennett
Cart—Carter
Eag—Eagle
Ens—Ensign
Flch—Fletcher
Holl—Holley
John—Johnson
King—Kingston
Mar—Marvel
7 Mas—Master
Mill—Miller
Rayf—Rayfield
Scoe—Scoe
Strm—Stromberg
Shk—Shakespeare
Sheb—Schebler
Stew—Stewart
Till—Tillotson
Zen—Zenith

Fuel Feed:
G—Gravity
8 P—Pressure
V—Vacuum

Governor:
Con—Continental
Del—Delaney
Dup—Duplex
Hin—Hinkley
Mer—Merrill
McC—McCanna
9 Mon—Monarch
Mue—Mueller
Phar—Pharo
Pier—Pierce
Rug—Ruggles
Sim—Simplex
Wau—Waukesha

Clutch (Make):
B. B.—Borg & Beck
B-Li.—Brown-Lipe
Covt.—Covert
Det.—Detlaff
Full.—Fuller
10 D. G.—Detroit Gear & Mach.
Dod.—Dodge Bros.
Hart—Hartford
HS—Hele-Shaw
M-E—Merchant & Evans
Munc.—Muncie
M-P—Muncie Products
T-D—Twin Disc
W-C—Warner Corporation
W-Gr—Warner Gear

Clutch (Type):
D—Disc
C—Cone
11 DP—Dry Plate
WP—Wet Plate
WD—Wet Disc
DD—Dry Disc
Fr—Friction

Ignition System:
Amr—American Swiss
Apo—Apollo
AtK—Atwater-Kent
AuL—Auto-Lite
Bos—Bosch
Ber—Berling
Con—Connecticut
Del—Delco
Eis—Eisemann
Kin—Kingston
12 KW—K. W. Ignition Co.
Lor—Louraine
NE—North East
POL—Prest-O-Lite
Rm—Remy
Sim—Simms
Spl—Splitdorf
Tea—Teagle
Wag—Wagner
Wes—Westinghouse

Engine Starter:
AC—Allis-Chalmers
AK—Atwater Kent
AL—Auto-Lite
Bj—Bijur
Bos—Bosch
13 DL—Delco
Dy—Dyneto
GD—Gray & Davis
LN—Leece-Neville
NE—North East
RE—Remy
Wg—Wagner
USL—U. S. L.
W—Westinghouse

Gearset:
B-Li—Brown-Lipe
Cott—Cotta
Covt—Covert
D-Sea—Driggs-Seabury
Det—Detroit
Dod.—Dodge Bros.
14 Dun—Dundore
Durst—Durston
Full—Fuller
G-Le—Grant Lees
MM—Mechanics Mach. Co.
Munc—Muncie
M-P—Muncie Products
Rock—Rockford
W-C—Warner Corporation
W-Gr—Warner Gear

Location of Gearset:
A—Amidships
15 R—Rear
U—Unit with engine
J—Unit with jackshaft

Universal:
A-B—Easton Mch. Co.
16 Acm—Acme
Arv—Arvac
Bear—Bearings Co.
Bld—Blood Brothers
Det—Detroit
Dit—Ditwiler
Eas—Easton
Flex—Flexite
Hart—Hartford
KB—Kinsler-Bennett
Mech—Mechanics
M-E—Merchant & Evans
Nor—Norwalk
Pet—Peters
Sned—Snead
Spic—Spicer
Ster—Sterling
Ther—Thermoid
UM—Universal Machine
UP—Universal Products

Springs:
All—Alloy Steel
Am—Am. Auto Parts
Bea—Beans
Cham—Champion
Coop—Cooper
Del—Delany
Det—Detroit
GC—Garden City
Har—Harvey
Hig—Higgins
IC—Iron City
Jax—Jaxon
Kal—Kalamazoo
17 Lah—Laher
Lig—Liggett
Mar—Maremont
Math—Mather
Mer—Merrill
Nat—National
Pen—Penn
Per—Perfection
Row—Rowland
Shel—Sheldon
SP—Spring Perch
Stan—Stan-Par
Ster—Sterling
Tem—Temme
Tut—Tuthill
US—United States
Wis—Wisconsin

Final Drive:
B—Bevel Gear
C—Chain
I—Internal Gear
18 N—Concentric Spur
P—Spur
R—Double Reduction
S—Spiral Bevel
W—Worm

Rear Axle (Make):
Amr—American
Badg—Badger
Col—Columbia
Stan—Chicago
19 Cl—Clark
Dun—Dunkirk
Eat—Eaton, Stan-Par
Hind—Hindley
Ir.M—Iron Mt.
Keno—Kenosha
Stn—Stanweld
Rock—Rockford
Russ—Russel
Sals—Salisbury
Sav—Savage
Shel—Sheldon
Thom—Thomson
Tim—Timken
Torb—Torbensen
W-M—Weston-Mott
US—United States
Vul—Vulcan
Walk—Walker
Wis—Wsconsin

Rear Axle (Type):
Flot—Floating
20 ½-Fl—Semi-Floating
¾-Fl—¾-Floating
D—Dead

Steering Gear:
CAS—C. A. S. Products Co
Dit—Ditwiler
Dod.—Dodge Bros.
Gem—Gemmer
Jac—Jacox
21 Lav—Lavine
M-P Muncie Products
Ros—Ross
Sag.—Saginaw Products Co.
W-C—Warner Corporation
Woh—Wohlrab

Wheels:
Arc—Archibald
AuW—Auto Wheel
Bim—Bimel
Cla—Clark
C&M—Crane & McMahon
Day—Dayton
Det—Detroit
E&O—Eberly & Oris
Hay—Haynes
Hoo—Hoopes Brothers
Jon—Jones
22 Kel—Kelsey
Mot—Motor Wheel
Mut—Mutual
Nor—Northern
Pru—Prudden
Roy—Royer
Rus—Russell
Sal—Salisbury
Sch—Schwartz
Smi—Smith
Sta—Stanwell
StM—St. Mary
Stn—Standard
Wal—Walker
Wan—Wayne
W-L—Waterhouse & Lester
Wes—Western Wheel Co

Rim Equipment:
Bak—Baker
23 Det—Detroit
Fir—Firestone
Gdy—Goodyear
Jax—Jaxon
Kel—Kelsey
Ken—Kennedy

Commercial Car Specifications—Corrected Monthly

The Specifications, Chassis Prices, Etc., Are Corrected Each Month From Data Supplied Direct by the Makers. Gasoline Tractor-Trucks Will be Found at the End of Gasoline Commercial Cars

See Also Replacement Table in "Service and Repair Departments." Truck Frame Dimensions Are Included in Replacement Table

(Where prices are not given it is because we have been unable to get them from authoritative sources)

*** An asterisk in front of the model name indicates that corrections have been made somewhere in the specifications since the previous month**

Trade Name and Model	Chassis Price	ENGINE DETAILS: Make and Model Number 4 Cylinder unless otherwise noted	Bore and Stroke	N. A. C. C. Horsepower	Valve Arrange't	How Cooled	Radiator (Make)	Radiator (Type)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Clutch (Make)	Clutch (Type)	Ignition System	Engine Starter	GEARSET: Make	Location	Speeds	Universal (Make)	Springs (Make)	REAR AXLE: Final Drive	Make	Type	Total Gear Reduction in High	Total Gear Reduction in Low	Steering Gear (Make)	TIRES, WHEELS, RIMS: *Pneumatic †Dual Front	Rear	Wheels (Make)	Rim Equipment	Chassis Weight	Wheelbase	Pr. Cent of Weight on Rear Wheels
1000 Pounds		1		2	3	4	5	6	7	8	9	10	11	12	13	14	15		16	17	18	19	20			21			22	23			
*Dodge Brothers	885	Own	3 7/16x4 1/2	24	L	C	MeC	PT	FS	Stew	V	.....	Own	DD	Own	NE	Own	U	3	Own	.....	B	Own	Flot	4.1	19.4	Own	32x4*	32x4*	Kel	Kel	2224	114	66.5
*Dort	685	Lyc 7000	3 1/2x5	19.6	L	T	Fed	C	S	Cart	V	.....	Own	C	Con	Bos	Own	U	3	MM	Lig	S	Fli	3/4 Fl	4.45	15.13	Sag	31x4*	31x4*	Imp	Cle	2015	105	....
Vim 29	1050	Own	3 1/8x4 1/2	15.6	L	T	MeC	Fin	FS	Zen	G	.....	B.B.	DD	Wes	W	Own	U	3	Spic	Shel	W	Own	.....	5.5	.....	CAS	31x4*	31x4*	Hoo	Fir	2175	108	....
Vim 30	1175	Own	3 1/8x4 1/2	15.6	L	T	MeC	Fin	FS	Zen	G	.....	B.B.	DD	Wes	W	Own	U	3	Spic	Shel	W	Own	.....	5.5	.....	CAS	32x4 1/2*	32x4 1/2*	Hoo	Fir	2290	127	....
1500 Pounds																																		
*Acason Fast	.....	Own	3 3/4x5	22.5	L	C	.....	C	F	Sheb	V	.....	Full	D	Eis	W	Full	U	3	Bld	Det	W	Timk	1/2 Fl	6.25	25	Ros	34x5*	34x5*	Bim	.....	3080	142	....
*Acme G	.....	Cont N-3 3/4	3 3/4x5	22.5	L	T	GO	C	FS	Rayf	V	Dup	B.B.	DP	Eis	GD	Cott	U	3	Bld	Det	W	Timk	1/2 Fl	6.2	24.8	Ros	35x5*	35x5*	Bim	.....	3050	129	50
*Brockway E	.....	Buda WU	3 3/4x5 1/8	22.5	L	Lng	Fin	FS	Strm	V	.....	W-Gr	DD	Rm	RE	W-Gr	U	3	Spic	Row	S	Col	3/4 Fl	5.1	25.	Gem	35x5*	35x5*	.....	Fir	3450	135	70
*Chevrolet G	745	Own	3 11/32x4	21.7	H	B	Har	.....	FS	Zen	G	.....	.....	C	Rm	AL	M-P	...	3	Own	.....	S	.....	1/2 Fl	.....	.....	M-P	31x4*	34x4 1/2*	.....	Jax	2167	120	....
Clydesdale 18	1890	Cont N-3 3/4	3 3/4x5	22.5	L	T	Own	PT	FS	Zen	V	Own	B-Li	DD	Eis	Bj	B-Li	U	3	Spic	Stan	W	Timk	1/2 Fl	5	16.6	Ros	34x5*	34x5*	.....	.....	3200	136	64
Garford 15	.....	Buda MU	3 5/8x5 1/8	21	L	T	C	Lng	PT	F	Strm	G	.....	.....	DD	AtK	AK	Own	U	3	Spic	Per	W	Timk	1/2 Fl	6.25	.....	Gem	34x5*	34x5	.....	.....	3500	132	....
H. R. L.-L	2200	H-Sp 7000	3 1/2x5	19.6	L	T	Fed	Fin	F	Zen	V	.....	Own	DP	Bos	GD	Covt	U	3	Spic	Shel	W	Wis	1/2 Fl	6.2	22.	Ross	34x4 1/2*	35x5*	Sch	Gdy	3300	134	....
Internat'l Speed Truck S	1500	Lyco-Int'l	3 1/2x5	19.6	L	T	Lng	Fin	FS	Ens	G	.....	Mun	DP	Con	AL	Mun	U	3	Sned	Stan	I	Torb	D	6.3	.....	CAS	34x5*	34x5*	Opt	.....	2600	124	50
Kearns 3/4	1600	H-Sp. 7000	3 x5	19.6	L	T	Own	H	F	Zen	V	Pier	B.B.	DD	Ber	Dy	G-Le	U	3	M-E	Math	I	Torb	D	5.3	24.	Lav	32x4 1/2*	32x4 1/2*	.....	Fir	2000	118	65
*Napoleon 7	1350	H-Sp 7000	3 1/2 5	19.6	H	T	Own	H	F	Sheb	G	.....	B.B.	D	Eis	GD	MM	U	3	UP	Math	I	Torb	D	5.1	.....	Lav	33x4*	33x4*	Roy	Fir	2800	121	....
*Rainier R11	1990	Cont-N	3 1/2	19.6	L	T	Har	H	FS	Zen	V	Mon	B-Li	DP	Eis	.....	B-Li	U	3	Hart	Per	W	Timk	1/2 Fl	7.2	23.9	Lav	35x5*	35x5*	.....	Fir	2350	125	80
Republic 75	1250	Lyco KB	3 1/2x5	19.6	L	T	Own	C	FS	Strm	V	.....	Own	DD	AuL	AL	Own	U	3	Spic	Math	I	Torb	D	5.38	15.06	Jac	32x4 1/2*	32x4 1/2*	Mot	Fir	2650	124	....
*Samson 15	.....	Own	3 11/32x4	21.8	H	T	Own	Pt	FS	Zen	G	Mon	Own	D	Rm	AL	Own	A	3	Own	Own	S	Own	1/2 Fl	6.33	21.02	Own	32x4*	32x4*	Own	.....	2300	118	46
Service 12	.....	Mid 409	3 1/4x4 1/2	16.9	H	C	Lng	Fin	F	.....	G	.....	.....	DP	.....	.....	Det	U	3	M-E	Shel	B	Timk	1/2 Fl	6.11	.....	Ros	32x4 1/2*	32x4 1/2*	Bim	.....	2700	128	....
*Stewart 14	1195	.....	3 5/8x5 1/8	21	L	C	Bus	PT	F	Zen	G	.....	.....	DP	Rm	.....	.....	U	3	Spic	Det	I	Cl	D	5.5	16.99	Ros	32x4 1/2*	32x4 1/2*	Way	Fir	3090	123	70
Stoughton C	1240	.....	3 1/2x5	19.6	L	T	.....	Fin	FS	Strm	G	.....	.....	DP	Wes	W	Own	...	Ther	.....	B	.....	.....	5.87	23.5	.....	34x4 1/2*	34x4 1/2*	.....	.....	2480	131	....
Triangle AA	1385	H-Sp	3 1/4x5	16.9	L	T	Per	ZZT	FS	Strm	G	.....	Full	DD	NE	NE	Full	U	3	UP	Det	I	Cl	D	6.75	20.	Gem	34x4 1/2	34x4 1/2	Hay	Fir	2600	115	60
*Watson B	1795	Wau BUX	3 3/4x5 1/4	22.5	L	P	GO	C	FS	John	G	Wau	B-Li	DP	Con	D	B-Li	U	3	M-E	Shel	W	Emp	1/2 Fl	6.2	20.7	Lav	35x5	35x5	Hoo	Fir	2900	128	60
White 15	2400	Own	3 3/4x5 1/2	22.5	L	C	.....	C	FS	Own	G	.....	Own	D	.....	.....	Own	A	4	Own	.....	B	Own	1/2 Fl	.....	.....	Own	34x5*	34x5*	.....	Fir	3200	133	....
*Yellow Cab M-22-3/4	1590	Cont N-3 3/4	3 3/4x5	22.5	L	T	Lng	Fin	FS	Zen	G	.....	B-Li	DD	Bos	.....	B-Li	U	3	Spic	Math	B	Timk	.....	4.9	16.31	Gem	33x4 1/2*	33x4 1/2*	Stn	Fir	2400	117	65
1 Ton																																		
Acason R	.....	Wau B.U.X.	3 3/4x5 1/4	22.5	L	P	Can	C	S	Sheb	V	Wau	Full	.....	Eis	.....	Full	U	4	Bld	Det	W	Timk	1/2 Fl	7.20	34.5	Ros	36x3 1/2	36x5	Bim	Opt	3650	142	....
Acme B	.....	Cont N	3 3/4x5	22.5	L	T	GO	C	FS	Rayf	V	Dup	B.B.	DP	Eis	GD	Cott	U	3	Bld	Det	W	Timk	1/2 Fl	7.2	28.8	Ros	34x3 1/2	34x5	Bim	.....	3406	129	50
Apex G	1450	Lyc KB	3 1/2x5	19.6	L	T	GO	C	S	Strm	V	.....	B.B.	DP	AuL	AL	Mun	U	3	Bld	Det	I	Torb	D	6.5	.....	Lav	33x5*	33x5*	Roy	Fir	2450	130	70
Apex	1750	Buda NU	3 5/8x5 1/8	21	L	T	GO	C	S	Strm	V	.....	Full	D	AuL	AL	Eull	U	3	Bld	Det	W	Timk	.....	6.25	.....	Lav	35x5*	35x5*	Roy	Fir	2650	130	70
Armleder 20	.....	Buda CTU	3 3/4x5 1/4	22.5	L	P	Own	Fin	F	Zen	V	.....	Full	DD	Bos	W	Full	U	3	Spic	Math	W	Timk	Flot	7.25	29	Ros	34x3 1/2	34x5	StM	.....	4200	148	....
*Atlas Merchant's Dispatch	1185	Lyco	3 1/2x5	19.6	L	T	Own	H	S	Strm	V	.....	B.B.	DD	AtK	Bj	Own	...	3	Ster	IC	W	Own	1/2 Fl	6	16.8	CAS	32x4 1/2*	32x4 1/2*	.....	.....	2650	130	70
Avery	.....	Own 6	3 x4	21.6	L	T	Own	C	S	Strm	V	Own	Own	DP	KW	W	Own	U	3	Pet	Math	I	Torb	D	8	26.66	Ros	34x5*	34x5*	StM	Gdy	2800	129	73
Bell M	1495	Buda	3 5/8x5 1/8	21	L	C	Chic	PT	F	Zen	V	.....	B.B.	DP	Eis	.....	Mun	U	3	Ther	Det	W	Ir-M	.....	7.2	.....	Dit	35x5	35x5	Bim	Fir	2500	126	65
Belmont	.....	GBS-SMG	3 3/4x4 1/4	22.5	L	C	GO	.....	S	Zen	G	.....	B.B.	.....	Con	Dy	.....	U	3	Ster	.....	B	.....	3/4 Fl	5.2	15.75	Lav	31x4*	31x4*	E-O	Stn	2000	113	60
Bessemer	.....	Cont N	3 1/2x5	19.6	L	T	.....	C	FS	Strm	G	.....	Full	DD	Bos	.....	Full	U	3	Arv	Per	I	Torb	D	7.1	20.25	Ros	34x3 1/2	34x4	Sch	Fir	2910	124	57
Birch 1	1285	Vict	3 1/2x5	19.6	L	T	Chic	PT	FS	Strm	G	.....	Full	DD	Con	.....	Full	U	3	UM	.....	I	Cl	D	.....	.....	Lav	32x3 1/2*	32x4*	.....	.....	3200	132	....
*Chevrolet T	1125	Own	3 11/32x5 1/4	21.7	H	C	Har	.....	FS	Zen	G	Mon	.....	C	Rm	AL	M-P	...	3	Arv	.....	W	Timk	1/2 Fl	.....	.....	M-P	33x4*	34x4 1/2	.....	Jax	2840	125	....
Clydesdale 20	2385	Cont	3 3/4x5	22.5	L	T	Own	PT	FS	Zen	V	Own	B-Li	DD	Eis	Bj	B-Li	U	4	Spic	Stan	W	Timk	1/2 Fl	6.2	20.4	Ros	34x5*	34x5*	.....	.....	3400	136	67
Collier 18	.....	Cont N	3 1/2x5	19.6	T	P	Lng	PT	S	Zen	V	Mon	Full	DP	Eis	.....	Full	U	3	UP	Math	W	Timk	1/2 Fl	7.75	31	Ros	34x4	34x5	Bim	Fir	3210	140	70
*Corbitt H-22	1400	Cont N 3/4	3 3/4x5	22.5	L	T	McC	Fin	FS	Strm	V	.....	B-Li	DD	Eis	.....	B-Li	U	3	Hart	Shel	W	Shel	1/2 Fl	5.5	19	Ros	34x3 1/2	34x4	Bim	Fir	3100	130	75
* Day Elder AS	1600	Cont N	3 3/4x5	22.5	L	C	Bus	Fin	FS	Zen	G	.....	Covt	DD	Eis	.....	Covt	U	3	Hart	IC	W	Shel	1/2 Fl	6	21.96	Gem	35x5*	35x5*	Jon	Fir	3200	128	70
Dearborn E (Speed)	1600	Buda MU	3 5/8x5 1/8	21	L	C	Chic	PT	F	Strm	V	.....	Full	DP	Bos	Bos	Full	U	3	Hart	.....	W	Wis	1/2 Fl	6.2	18.6	Dit	35x5*	35x5*	.....	Fir	3280	133	65
Defiance G	1695	Hig	3 3/4x5	22.5	L	C	Per	C	FS	Strm	V	.....	B.B.	D	Eis	AL	G-Le	U	3	Arv	Det	B	Eat	.....	5.5	.....	Own	35x5*	35x5*	StM	Fir	2700	128	....
Denby 31	1625	Cont	3 1/2x5	19.6	L	C	Lng	PT	FS	Strm	G	.....	Full	DD	Eis	RE	Full	U	3	UP	Det	B	Col	1/2 Fl	5.85	23.46	Ros	35x5*	35x5*	Mot	Fir	2840	130	73
Dependable Dispatch A	1750	Buda MU	3 5/8x5 1/8	21	L	T	Lng	Fin	F	Zen	V	Mon	B.B.	DD	Spl	AL	Det	U	3	Acm	Per	W	Timk	1/2 Fl	6.25	20.55	Ros	35x5*	36x6*	Bim	Fir	4000	134	75
Diehl A	.....	Cont N	3 1/2x5	19.6	L	T	.....	H	FS	Zen	G	.....	B.B.	.....	Sim	....	Durs	...	3	KB	Mar	I	Torb	D	5.3	.....	Ros	34x4 1/2*	35x5*	Sch	Fir	2400	115	90
*Earl 40	1285	Own 40	3 11/16x5 1/4	18.9	L	T	SW	ZZT	FS	Scoe	V	.....	B.B.	DP	Con	AL	Own	U	3	Own	Math	S	Own	1/2 Fl	4.66	.....	CAS	32x4*	32x4*	Hay	Jax	.....	112	50
Federal SD	1800	Cont J-4	3 3/4x5	22.5	L	C	Own	Fin	F	Zen	V	Phar	B.B.	DP	Eis	.....	Own	A	3	Spic	Math	W	Timk	1/2 Fl	7.2	20.65	Gem	35x5*	36x6*	Det	Det	3600	132	65
*Ford T	445	Own	3 3/4x4	22.5	L	C	Own	Fin	S	.....	G	.....	Own	.....	Own	.....	Own	U	2	Own	Own	W	Own	1/2 Fl	Opt	19.9	Own	30x3 1/2*	32x4 1/2	.....	.....	1380	124	....
*Forschler A	.....	Cont N	3 1/2x5	19.6	L	C	EM	.....	FS	Zen	V	Dup	Full	.....	Bos	Op	Full	...	3	Hart	Own	W	Shel	.....	.....	.....	Ros	34x3	34x4	.....	.....	3450	120	....
*Fulton A	1750	H-Sp-7000	3 1/2x5	19.6	L	T	Liv	H	FS	Cart	G	.....	DP	B.B.	Ber	W	Durs	U	3	Spic	Row	B	Col	.....	6.8	.....	Lav	35x5	35x5	Hoo	Fir	2800	130	65

*G. M. C. K-16	1495	Own	3½x5½	19.6	L	T	Own	Fin	F	Mar	G	Own	Own	DD	Eis	Own	Own	U	3	UM	Det	B	Own	¾ Fl	6	21.9	Own	34x5*	34x5*	Kel	.....	3300	132	66								
Graham Bros.	1370	Dodge	3½x4½	24	L	C	T	Own	Fin	S	Strm	G	.....	B.B.	DP	Con	AL	.....	U	3	Dod	Det	S	Own	½	6.28	29.29	Dod	33x4½*	34x5*	.....	.....	2500	140	75								
*Gramm Bernstein 10 Speed T	1365	Lyco	3½x5	19.6	L	T	Own	Fin	S	Strm	G	.....	Full	DD	Bos	.....	Full	U	3	Own	Per	B	Sals	¾ Fl	5.75	21	Ros	33x5*	33x5*	.....	Fir	2875	128	90								
Higrade A18	2100	Cont N	3½x5	19.6	L	T	C	Per	PT	FS	Zen	V	Dup	Full	DD	Sim	AL	Full	U	3	Bld	Per	W	Shel	.....	7.7	22.75	Lav	35x5	35x5	Det	Fir	2700	115	66								
Independent B (Iowa)	1665	Cont N	3½x5	19.6	L	C	GC	PT	FS	Strm	V	.....	Full	DD	Bos	.....	Full	U	3	Bld	GC	I	Russ	D	.....	.....	Lav	34x3	34x4	StM	Fir	3480	135	75								
International 21	1750	Own	3½x5½	19.6	L	C	C	Own	Fin	FS	Ens	G	Own	Own	DP	Bos	Own	Own	A	3	Own	.....	I	Own	D	7	25.	Own	36x3½	36x3½	Own	.....	3030	115	50								
*Kissel Express	1585	Own 80000	3⅞x5½	24.1	L	C	McC	PT	S	Strm	V	.....	W-Gr	DP	Rm	.....	W-Gr	U	3	Spic	Math	W	Timk	Flot	5.17	18.9	Jac	34x5*	34x5*	StM	.....	3780	140	68								
Kleiber AA	.....	Cont C-4	4½x5¼	27.2	L	C	Per	C	FS	Strm	G	Pier	.....	DD	Bos	.....	B-Li	U	3	Spic	.....	W	Timk	¾ Fl	7.1	31.	Ros	34x3½	34x5	W-L	.....	4200	130	75								
Larrabee Day X-2	1950	Con 7R	3¼x4½	24.3	L	C	T	Fed	H	F	Zen	G	.....	B-Li	DD	Bos	Bos	B-Li	U	3	.....	Shel	B	Shel	½ Fl	5.75	23	Gem	34x5	34x5	.....	.....	3350	138	....								
*Luedinghaus C	1695	H-Sp 7000	3½x5	19.6	H	C	T	Own	PT	FS	Sheb	G	.....	B.B.	D	Wei	W	G-Le	U	3	Spic	Tut	W	Wis	½ Fl	6.2	18.6	Lav	35x5*	35x5*	StM	.....	2850	130	75								
Menominee HT	.....	Wis CAU	3¾x5	22.5	L	C	T	Own	Fin	FS	Strm	G	Mon	Det	DP	Eis	Opt	Cott	U	3	Spic	Tut	W	Wis	.....	7.75	28.52	Ros	34x3½	36x5	Stn	Fir	3525	130	74								
Napoleon 9	1535	Viet	3½x5	19.6	H	C	T	Own	PT	F	Sheb	G	.....	Full	DD	Con	AL	Full	U	3	Bld	Math	I	Torb	D	6.1	18.1	Lav	35x5*	35x5*	Roy	Fir	3200	133	65								
Nash 2018	1895	Own-4	3¾x5¼	22.5	L	C	T	.....	PT	F	Strm	G	Sim	B.B.	DP	Eis	AL	.....	U	3	Own	Har	I	CL.	D	6.8	21.85	Lav	34x3	34x4	AuW	.....	3400	130	67.5								
Norwalk	1695	Lyco K	3½x5	19.6	L	T	Stan	C	FS	Zen	V	.....	B.B.	D	Del	Dy	G-Le	...	3	UM	Stan	W	Stan	¾ Fl	7.75	.....	CAS	34x3½	34x4	E&O	Fir	2940	130	90								
Oldsmobile	1095	Own	3 11/16x5¼	21.7	H	T	P	Own	C	FS	Zen	V	.....	Own	D	Rm	AL	W-Gr	U	3	Spic	.....	I	Torb	D	6.5	22.8	Jac	35x5*	35x5*	AuW	Jax	2580	128	73								
Pioneer AA, (Chicago)	1550	GBS	3¾x4¼	22.5	L	T	Own	H	F	Zen	V	.....	DG	D	Bos	AL	G-Le	U	3	Ther	GC	W	IrM	¾ Fl	6.1	25.1	Wol	32x4½*	32x4½*	Bim	Fir	2500	132	80								
Rainier R-19	2150	Cont N	3½x5	19.6	L	T	Har	H	FS	Zen	V	Mon	B-Li	DP	Eis	.....	B-Li	U	3	Hart	Per	W	Shel	.....	7.8	.....	Lav	34x3	34x4	.....	Fir	2950	133	80								
*Republic 10	1395	Cont N 3¾	3¾x5	22.5	L	T	Own	C	FS	Strm	G	Rug	Full	DD	Bos	.....	Full	U	3	Spic	Math	I	Torb	D	6.28	18.21	Jac	34x3	34x4	Nor	Fir	2800	124	....								
*Republic 10-E	1695	Cont N-3¾	3¾x5	22.5	L	T	Own	C	FS	Strm	G	.....	Full	DD	Bos	.....	Full	U	3	Spic	Math	I	Torb	D	6.28	25.12	Jac	35x5*	35x5*	Nor	Fir	2900	124	....								
Sandow G	2295	Cont N	3½x5	19.6	L	T	.....	Fin	FS	Strm	G	.....	.....	DD	Eis	.....	Full	U	3	Spic	GC	W	Shel	.....	7.8	23.1	Ros	34x3½	34x5	Stn	.....	3000	120	70								
*Signal NF	1950	Cont J4	3¾x5	22.5	L	C	McC	Fin	FS	Strm	G	Pier	B-Li	DP	Eis	.....	B-Li	A	3	UM	.....	W	Timk	½ Fl	7.2	.....	Ros	34x5*	36x6*	Kel	.....	3550	132	....								
*Southern 10	2090	Buda WU	3¾x5½	22.5	L	C	R-T	PT	S	Zen	V	Pier	Full	DD	Bos	.....	Full	U	3	.....	Shel	W	Shel	.....	.....	.....	Ros	35x5	35x5	.....	.....	.....	130	60								
Standard I-K	1600	Cont N	3¾x5	22.5	L	C	Lng	Fin	F	Strm	G	Mon	B-Li	DD	Eis	.....	B-Li	U	3	Spic	Per	W	Timk	½ Fl	7.2	23.97	Ros	34x3½	34x5	.....	Opt	3466	134	71.5								
*Stewart 15	1395	Buda MU	3½x5½	21	L	C	Bus	PT	F	Zen	G	.....	Full	DP	Eis	Dy	Full	U	3	Spic	Det	I	Cl	D	6.7	26.8	Ros	35x5*	35x5*	Way	Fir	3200	130	70								
Stoughton A	1995	Wau Bux	3¾x5¼	22.5	L	C	Own	Fin	FS	Strm	G	Wau	B-Li	DD	Eis	.....	B-Li	U	3	Ther	Shel	W	Shel	½ Fl	6	24	Lav	35x5*	35x5*	Bim	Gdy	3300	130	....								
Superior D	1650	Cont N-¾	3¾x5	22.5	L	T	Idl	C	FS	Strm	V	Pier	Full	DD	Eis	.....	Full	U	3	Arv	Tut	I	Torb	D	7.1	20.7	CAS	35x5*	35x5*	Sch	Fir	2950	124	75								
Transport 20	1395	Buda WU	3¾x5½	22.5	L	T	Mod	C	FS	Strm	G	Sim	Full	DD	Eis	.....	Full	U	3	Ther	Det	I	Cl	D	7.2	21.8	Jac	34x3½	34x4	.....	Fir	3070	130	70								
*Ursus T 30	2050	Buda MU	3⅞x5½	21.	L	T	.....	PT	FS	Strm	V	.....	B-Li	DP	Wes	W	B-Li	...	3	Ther	.....	W	Timk	Flot	.....	.....	Ros	34x5*	34x5*	Roy	Fir	.....	132	....								
Vim 31	1975	Her-CU-2	3¾x5½	22.5	L	C	McC	Fin	F	Zen	G	.....	B-Li	D	Spl	W	B-Li	U	3	Spic	Shel	W	Shel	.....	6.5	.....	Gem	35x5*	35x5*	Hoo	Fir	3790	125	....								
White Hickory E	.....	Cont N-¾	3¾x5	22.5	L	P	C	Chic	Fin	FS	Strm	V	Sim	Full	DD	Eis	.....	Full	U	4	M-E	Shel	W	Timk	½ Fl	7.2	21.6	Lav	34x5*	34x5*	Bim	Fir	3165	124	68								
*Wichita K	2300	Wau-BX	3¾x5¼	22.5	L	G	D	.....	PT	F	Strm	G	Wau	Own	C	Wag	.....	B-Li	A	4	Own	Det	W	Shel	½ Fl	7.8	40.56	Ros	36x3	36x4	Bim	.....	3650	144	80								
*Wilcox AA	.....	Buda	3¾x5½	22.5	L	D	.....	PT	S	Strm	V	Dup	B-Li	DD	Bos	.....	B-Li	U	3	Spic	Shel	R	Walk	½ Fl	7.7	25.8	Gem	35x5*	35x5	.....	.....	3600	130	75								
Winther Delivery Special	1795	H-Sp 7000	3½x5	19.6	L	T	C	Brm	PT	F	Strm	V	.....	W-Gr	DD	Wes	W	W-Gr	U	3	Pet	Det	I	Torb	D	6.6	21.4	Lav	34x4½*	35x5*	Mut	Fir	2700	135	66								
Wisconsin B (Sauk City)	1950	Wau FU	4 x3¾	25.6	L	C	C	Chic	PT	F	Strm	V	Wau	B-Li	DD	Bos	Bos	B-Li	U	4	Spic	Det	W	Timk	½ Fl	7	.....	Lav	34x5*	34x5*	Bim	Gdy	3400	136	80								
*Wolverine J-1	.....	Cont J-4	3¾x5	22.5	L	C	C	Lng	Fin	F	Strm	G	Phar	Full	DD	Eis	Bos	Full	U	3	UP	Am	I	Russ	D	8.2	32.8	Gem	34x3½	34x4	Hay	Gdy	3300	140	72								
*Young 5	2000	Cont N	3¾x5	22.5	L	T	Whee	Fin	F	Sch	G	.....	B-Li	D	Eis	.....	B-Li	U	3	Spic	Math	W	Timk	½ Fl	.....	.....	Ros	34x3½	34x5	StM	.....	2950	138	70								
1¼ Ton																																									
Akron Multi-Truck	1695	Hin	4 x5¼	25.6	L	C	Fed	H	F	Strm	G	.....	War	DP	Wes	W	W-Gr	U	3	.....	Stan	S	Eat	½ Fl	5.125	.....	Jac	34x5*	34x5*	Bim	Fir	3600	134	....								
Commerce T	1450	Cont N	3¾x5	22.5	L	T	Lng	Fin	S	Zen	V	.....	DG	C	Eis	Bj	Det	U	3	Spic	Det	B	Sals	¾ Fl	5.71	18.2	Jac	34x4½	34x4½	Bim	Fir	2900	127	80								
Diamond T-O-3	1975	Hin	3¾x5¼	22.5	L	C	GO	Fin	F	Strm	V	.....	Covt	DD	Bos	.....	Covt	U	3	Spic	Math	W	Wis	½ Fl	6.20	26.06	Gem	36x3½	36x4	.....	.....	3800	132	....								
Garford 25 B	.....	Buda WU	3¾x5½	22.5	L	C	Own	Fin	S	Strm	V	.....	.....	DD	Spl	.....	Own	A	3	Spic	Per	W	Timk	½ Fl	7.75	.....	Ros	36x3½	36x4	.....	.....	4000	135	....								
*Reo F	1245	Own	4½x4½	27.2	L	C	C	Own	PT	S	John	G	.....	Own	DD	.....	.....	Own	A	3	Own	Pen	B	Own	Flot	4.7	17.3	Own	34x4½*	34x4½*	Pru	Fir	2560	128	62.5								
*Samson 25	.....	Own	3 11/16x5¼	21.8	H	C	C	Own	Pt	FS	Zen	G	Mon	Own	D	Rm	AL	Own	A	3	Own	Own	S	Own	½ Fl	6.83	24.12	Own	35x5*	35x5*	Own	.....	2800	118	47								
Schwartz A	1685	Lyc KB	3½x5	19.6	L	T	G&O	H	S	Car	V	.....	Full	DP	Wes	Wes	Full	U	3	M-E	Row	B	Eat	½ Fl	5.625	22.1	Own	34x4½*	35x5*	Det	.....	3100	132	....								
*Service 15	.....	Mid 408	3½x5	21	H	C	Lng	Fin	F	Sheb	G	.....	B-Li	DP	Rm	RE	B-Li	U	3	M-E	Shel	B	Eat	½ Fl	5.625	22.1	Own	34x4½*	35x5*	Det	.....	3100	132	....								
*Yellow Cab M41 1¼	1640	Cont N-3¾	3¾x5	22.5	L	C	T	Lng	Fin	FS	Zen	G	.....	B-Li	DD	Bos	.....	B-Li	U	3	Spic	Math	W	Timk	½ Fl	7.2	24	Gem	35x5*	35x5*	Stn	Fir	2850	130	65								
1½ Ton																																									
Acason RB	.....	Wau BUX	3¾x5¼	22.5	L	P	C	Can	C	S	Sheb	V	Wau	Full	.....	Eis	.....	Full	U	4	Bld	Det	W	Timk	½ Fl	7.75	37.2	Ros	36x3½	36x6	Bim	Opt	3850	142	....								
Ace 1½	.....	Buda WU	3¾x5½	22.5	L	T	G	Mod	ZZT	S	Zen	V	.....	Full	DP	Eis	W	Full	A	3	UM	Math	W	Timk	½ Fl	7.75	30.1	Ros	34x3½	34x5	Sch	Fir	4750	144	80								
Acme F	.....	Cont J4	3¾x5	22.5	L	C	GO	Fin	F	Zen	V	Dup	B.B.	DP	Eis	DL	Cott	U	3	Bld	Det	W	Timk	½ Fl	8.75	35	Ros	34x3½	34x5	Bim	.....	3982	141	50								
Ajax B-2	.....	Wei MAU	3¾x5½	22.5	H	C	G	G&O	.....	F	Strm	V	.....	Full	D	Wes	W	Full	...	3	Hart	Mer	W	Timk	½ Fl	7.20	28.8	Ros	34x5*	36x6*	Smi	Fir	3242	134	80								
Apex D	1915	Buda WU	3¾x5½	22.5	L	T	P	GO	C	F	Strm	V	.....	Full	D	AuL	Op	Full	U	3	Bld	Det	I	Torb	D	8.1	24.1	Lav	34x3½	34x4	Roy	Fir	3070	130	70								
Armleder 21	.....	Buda CTU	3¾x5¼	22.5	L	P	Lng	Fin	S	Zen	V	.....	.....	DD	Bos	.....	Full	A	3	.....	Own	W	Timk	.....	7.75	32.8	Ros	34x3½	34x6	.....	.....	.....	p	....								
Armleder 40	.....	Cont C-4	4½x5¼	27.2	L	P	Lng	Fin	S	Zen	G	.....	.....	DD	Bos	.....	B-Li	A	3	.....	Own	W	Timk	.....	.....	40.8	Ros	34x4½	34x6	.....	.....	4500	I	....								
Atco B	.....	Buda CTU	3¾x5¼	22.5	L	C	Chic	PT	F	Strm	G	.....	Full	D	Eis	W	Full	U	3	Hart	GC	W	Wis	.....	7.25	29	Ros	34x5*	36x6*	Smi	Fir	3900	132	....								
Atco B 1	.....	Buda CTU	3¾x5¼	22.5	L	C	Chic	PT	F	Strm	G	.....	Full	D	Eis	W	Full	U	3	Hart	GC	I	Torb	D	7	28	Ros	34x5*	36x6*	Std	Fir	4200	132	....								
Atterbury 20R	2475	Cont J4	3¾x5	22.5	C	C	Own	Fin	F	Zen	V	Sim	Full	DD	Ber	.....	Full	U	3	Spic	SP	W	Timk	¾ Fl	7.75	31	Ros	34x3½	34x5	Arc	Fir	4500	144	71¼								
Autocar F	1950	Own 2	4¾x4½	18	L	C	C	Own	Fin	S	Strm	G	.....	Own	DP	.....	.....	Own	A	3	.....	.....	R	Own	Flot	8.3	33.2	Own	34x4	34x5	Hoo	.....	3600	97	65								
Autocar G	2050	Own 2	4¾x4½	18	L	C	C	Own	Fin	S	Strm	G	.....	Own	DP	.....	.....	Own	A	3	.....	.....	R	Own	Flot	8.3	33.2	Own	34x4	34x5	Hoo	.....	3700	120	65								
Available H1½	2450	Her CU3	4 x5½	25.6	L	C	C	Chic	Fin	F	Strm	V	McC	B-Li	DD	Bos	.....	B-Li	U	3	M-E	Tut	W	Timk	½ Fl	7	28	Ros	36x3½	36x5	Sch	.....	4000	145	75								
Bell E	2100	Buda	3¾x5¼	22.5	L	C	C	Chic	PT	F	Strm	V	Dup	B.B.	DP	Eis	.....	Det	U	3	UP	Det	I	Russ	D	8.8	25.7	Gem	35x5*	36x6*	Bim	Fir	3500	136	65								
Belmont B	.....	Wis CAU	3¾x5	22.5	L	G	R-T	.....	F	Zen	V	Mon	B.B.	D	Eis	.....	.....	.....	U	3	Ster	.....	I	Russ	D	7.7	23	Lav	34x4½*	34x5	E-O	Stn	3200	139	75								
Bessemer H2	.....	Cont-N¾	3¾x5	22.5	L	T	.....	C	FS	Strm	G	.....	B.B.	DP	Bos	.....	B-Li	A	3	Arv	Per	W	Timk	½ Fl	7.25	.....	Ros	34x3½	36x6	Jon	Fir	3800	144	67								
*Bridgeport A 1½	2350	Buda WU	3¾x5½	22.5	L	C	C	Own	Fin	FS	Strm	G	Pier	B.B.	D	Eis	.....	B-Li	U	3	Hart	Per	W	Wis	½ Fl	.....	33.6	Ros	34x4	34x5	Sch	.....	3300	138	....								
Brinton C	1500	Cont N-3¾	3¾x5	22.5	L	C	Bus	PT	F	Strm	G	.....	B-Li	D	Bos	.....	B-Li	U	4	Spic	Per	W	Timk	½ Fl	8.75	35	Ros	36x3½	36x5	Hoo	.....	4000	140	70								
Brookway 8-4	.....	Cont J-4	3¾x5	22.5	L	C	C	Bus	Fir	F	Strm	V	Phar	B-Li	DD	Eis	.....	B-Li	U	3	Spic	Mer	W	Shel	½ Fl	7.8	31.2	Gem	36x3½	36x5	Hoo	.....	4600	144	85								
Capitol G-1½	2975	Wis-CAU	3¾x5	22.5	L	C	C	GO	Fin	F	Strm	G	Sim	Det	DD	Bos	W	Cott	U	4	Spic	SP	W	Wis	½ Fl	6.2	32.3	Ros	35x5*	38x7*	.....	Fir	4600	144	....								
Chicago C1½	.....	Her-CU2	3¾x5½	22.5	L	C	C	.....	PT	F	Strm	G	Sim	B-Li	D	Bos	.....	B-Li	U	3	Pet	Math	W	Timk	½ Fl	7.2	25.8	Gem	36x3½	36x5	Opt	Stn	3800	144	....								
Climber A-20	2450	H-Sp 7000	3½x5	19.6	L	T	C	Chic	ZZT	FS	Strm	V	.....	Hart	DP	AtK	W	Mun	U	3	Spic	Lah	I	Torb	D	8	36.1	Ros	36x6*	38x7*	Roy	Fir	4150	146	75								
Clydesdale 42	2475	Cont	3¾x5	22.5	L	T	Own	PT	FS	Zen	G	Own	B-Li	DD	Bos	.....	B-Li	U	3	Spic	Stan	W	Timk	½ Fl	7	23.3	Ros	36x3½	36x6	.....	.....	4650	146	72								
Collier 19	.....	Cont N¾	3¾x5	22.5	T	P	Lng	PT	S	Zen	V	Mon	Full	DP	Eis	.....	Full	U	3	Spic	Math	W	Timk	½ Fl	7.75	31	Ros	36x4	36x6	Bim	Fir	4000	144	70								
Columbia H	2350	Cont N	3¾x5	22.5	L	P	C	Lng	Fin	F	Strm	G	.....	B.B.	DP	Spl	.....	Covt	U	3	Spic	Per	I	Russ	D	7.4	46	Own	35x5*	34x5	Det	Fir	3800	140	....								
Commerce 12	1800	Cont N	3¾x5	22.5	L	C	T	Lng	Fin	S	Zen	V	.....	B-Li	DP	Eis	Bj	B-Li	U	4	Spic	Det	I	Torb	D	6.2	26.3	Jac	35x5	35x5	Bim	Fir	3100	130	90								
Concord A	3150	Buda ITU	4 x5½	25.6	L	C	T	Bus	PT	F	Zen	G	Mon	B-Li	DP	Eis	.....	B-Li	U	4	Spic	Per	W	Timk	½ Fl	8.75	35	Ros	36x3½	36x5	Arc	Fir	5000	140	70								
Corbitt E-22	2200	Cont N-¾	3¾x5	22.5	L	C	T	McC	Fin	FS	Strm	V	Sim	B-Li	DD	Eis	.....	B-Li	U	3	Hart	Shel	W	Shel	½ Fl	6.5	19.5	Ros	34x3½	34x5	Bim	Fir	3890	140	75								
*Cyclone A	2300	H-Sp 7000	3½x5	19.6	L	T	C	Lng	PT	FS	Sheb	G	.....	W-Gr	D	Wes	W	W-Gr	U	3	Nor	Row	I	Torb	D	8.23	26.66	Ros	34x5*	36x6*	Day	Opt	3250	136	75								
Dart S	.....	Buda WU	3¾x5½	22.5	L	T	T	Own	C	S	Zen	V	Pier	Full	DD	Eis	.....	Full	U	3	Spic	Per	W	Own	.....	7.5	22.5	Ros	34x3½	34x6	Pru	.....	3800	140	80								
Day Elder B	2000	Cont N	3¾x5	22.5	L	T	T	Bus	Fin	FS	Zen	G	.....	Covt	DD	Eis	.....	Covt	U	3	Hart	IC	W	Shel	½ Fl	8.75	32.03	Gem	34x3½	34x5	Jon	Fir	3500	144	70								
Dearborn F	2180	Buda WU	3¾x5½	22.5	L	T	T	Chic	Fin	FS	Strm	V	.....	Full	DP	Bos	.....	Full	U	3	Arv	Tut	W	Wis	½ Fl	8.5	25.5	Dit	34x4	34x5	.....	.....	3280	126	70								
Dearborn FX	2300	Buda WU	3¾x5½	22.5	L	T	T	Chic	Fin	FS	Strm	V	.....	Full	DP	Bos	.....	Full	U	3	Hart	Tut	W	Wis	½ Fl	8.5	25.5	Dit	34x4	34x5	.....	.....	3600	138	70								
*Defiance D	2095	Hig	3¾x5	22.5	L	P	T	Per	C	FS	Strm	V	.....	B.B.	DP	Eis	AL	G-Le	U	3	Arv	Det	I	Torb	D	.....	21	Own	35x5*	36x6*	StM	Fir	3200	140	85								
Denby 33	2300	Cont N¾	3¾x5	22.5	L	C	T	Lng	PT	FS	Strm	G	.....	Full	DD	Eis	RE	Full	U	3	Up	Det	I	Cl	D	7.1	27.32	Gem	35x5*	38x7*	Mot	Fir	3800	136	65								
Dependable C-1½	2350	Buda CTU	3¾x5¼	22.5	L	T	C	Lng	Fin	F	Zen	V	Mon	Full	DD	Spl	AL	Full	U	3	Acm	Per	W	Wis	½ Fl	8.2	31.5	Ros	34x3½	34x5	Bim	Fir	4120	Op	70								
Diamond T-Farm Spec	2525	Hin	3¾x5¼	22.5	L	C	C	GO	Fin	F	Strm	V	Own	Covt	DD	Bos	....	Covt	U	3	Spic	Math	W	Wis	½ Fl	8.2	29.9	Gem	36x3½	36x5	.....	.....	5100	144	....								

Trade Name and Model	Chassis Price	ENGINE DETAILS: Make and Model Number 4 Cylinder unless otherwise noted	Bore and Stroke	N. A. C. C. Horsepower	Valve Arrange't	How Cooled	Radiator (Make)	Radiator (Type)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Clutch (Make)	Clutch (Type)	Ignition System	Engine Starter	GEARSET: Make	Location	Speeds	Universal (Make)	Springs (Make)	REAR AXLE: Final Drive	Make	Type	Total Gear Reduction in High	Total Gear Reduction in Low	Steering Gear (Make)	TIRES, WHEELS, RIMS: *Pneumatic †Dual: Front	Rear	Wheels (Make)	Rim Equipment	Chassis Weight	Wheelbase	Pr. Cent of Weight on Rear Wheels
1½ Ton—Con'd		1			2	3	4	5	6	7	8	9	10	11	12	13	14	15		16	17	18	19	20			21			22	23			
Diamond T—T	2250	Hin	3¾x5½	22.5	L	C	GO	Fin	F	Strm	V	Own	Covt	DD	Bos	.....	Covt	U	3	Spic	Math	W	Timk	½Fl	8.2	29.9	Gem	36x3½	36x5	.....	.....	4150	144	....
*Diehl B	.....	H-Sp 7000	3½x5	19.6	L	T	.....	H	FS	Zen	G	.....	M-E	.....	Bos	.....	Durs	...	3	M-E	Row	I	Torb	D	5.3	.....	Ros	.....	.....	Wan	.....	2500	120	70
D-Olt AA	2650	H-Sp 7000	3½x5	19.6	L	T	GO	PT	S	Zen	V	Opt	ß.B.	.....	Eis	.....	Cott	...	4	Spic	SP	W	Timk	½Fl	8.25	.....	Ros	34x4	34x5	.....	.....	5300	168	70
*Douglas G–1½	1750	Buda WU	3¾x5½	22.5	L	S	Own	PT	P	Sheb	V	.....	Full	DP	Eis	.....	Full	U	3	Arv	Own	I	Torb	D	8	23.1	Ros	24x3½	34x5	Own	Fir	3725	126	65
*Douglas GW	1750	Wei	3¾x5½	22.5	H	C	Own	PT	F	Sheb	V	.....	B.B.	DP	Eis	.....	G-Le	U	3	Arv	Own	I	Torb	D	8	23.1	Ros	24x3½	34x5	Own	Fir	3725	126	65
*Erie	.....	Buda CTU	3¾x5¼	22.5	L	C	Fed	C	FS	Zen	V	.....	Full	D	Bos	Bos	Full	A	3	Arv	Per	W	Shel	.....	6.5	26	Ros	36x6*	36x6*	Bim	Fir	4100	144	75
Federal TE	2175	Cont C4	4⅛x5¼	27.2	L	C	Own	PT	FS	Zen	G	Phar	B.B.	DP	Eis	.....	Own	A	4	Spic	Mat	W	Timk	Flot	8.5	37.4	Gem	36x3½	36x5	Sch	Fir	4250	144	68.5
Forschler C	.....	Cont N	3½x5	19.6	L	C	Own	.....	FS	Zen	V	Dup	Full	.....	Bos	Op	Full	...	3	Hart	Own	W	Shel	.....	.....	.....	Ros	36x3½	36x5	Smi	.....	3670	120	....
Front Drive C	2800	Buda CTU	3¾x5¼	22.5	L	G	EM	PT	S	Zen	G	Pier	ß.B.	DD	Spl	Op	Own	A	3	Own	Own	W	Own	½Fl	8	32	Lav	34x5	34x5	Stn	.....	3200	Op	55
Gersix M	3100	Buda ITU	4 x5½	25.6	L	C	Idl	C	F	Strm	V	Mon	B.B.	.....	Bos	.....	Cott	U	3	Bld	Tut	W	Shel	.....	7.7	31	Ros	36x3½	36x6	Jon	.....	4300	142	70
*Giant 15A	2250	Cont N	3¾x5	22.5	L	T	Idl	.....	FS	Sheb	G	.....	B-Li	DD	Eis	.....	B-Li	U	3	Spic	Math	W	Timk	½Fl	7.8	24.97	Jac	34x3½	34x5	Way	.....	3450	138	94
Graham Bros	1430	Dodge	3⅞x4¼	24	L	C	.....	T	FS	Stew	V	.....	Dod	D	NE	NE	Dod	U	3	UP	Det	S	Own	½	6.28	29.29	Dod	33x4½*	34x5*	.....	.....	2500	140	75
Gramm Bernstein 15	1900	Cont N	3¾x5	22.5	L	T	Own	Fin	S	Strm	G	.....	Full	DD	NE	NE	Full	A	3	Own	Per	I	Cl	D	7.6	30.4	Ros	36x3½	36x5	Bim	Fir	3800	138	90.5
Gramm Bernstein 65	2500	Cont N	3¾x5	22.5	L	T	Own	Fin	S	Strm	G	.....	Full	DD	NE	NE	Own	A	3	Own	Per	W	Eat	½Fl	7.8	28	Ros	36x3½	36x5	Bim	Fir	4200	138	90.5
G. W. W. Farm Spec	1950	Wei	3¾x5½	22.5	H	P	Chic	.....	F	Sheb	G	.....	Full	.....	Del	Del	Full	U	3	Acm	GC	I	Cl	D	7	.....	Woh	35x5	35x5	Roy	Fir	3200	142	65
Higrade B20	2500	Cont K4	4⅛x5¼	27.2	L	G	Per	PT	FS	Zen	V	.....	Full	DP	Eis	AL	Full	U	3	Bld	Per	W	Shel	.....	7.7	31	Lav	36x6	36x6	Det	Fir	3100	130	66
H.R.L.-R	3250	Hink HAA	4 x5¼	25.6	L	C	Fed	Fin	F	Zen	V	Hin	B-Li	DP	Bos	GD	B-Li	U	4	Spic	Shel	W	Shel	.....	7.75	30	Ros	36x4	36x7	Sch	Gdy	4560	144	....
*Hurlburt	.....	Buda IU	4 x5½	25.6	L	C	Own	.....	FS	Flch	G	Dup	B-Li	D	Eis	.....	B-Li	U	3	Spic	Per	W	Emp	.....	.....	.....	Ros	34x4	34x5	Way	.....	4000	148	85
Huron-Erie	.....	Buda CTU	3¾x5¼	22.5	L	C	.....	Fin	F	Zen	V	Pier	B.B.	D	Bos	.....	Cott	U	4	Det	Det	I	Cl	D	7	36.4	Jac	35x5*	38x7*	AuW	Fir	.....	144	90
Independent G (Iowa)	2040	Cont N	3¾x5	22.5	L	C	GC	PT	FS	Strm	V	.....	Full	DD	Bos	.....	Full	U	3	Bld	GC	I	Russ	D	8.2	.....	Lav	34x3½	34x5	StM	Fir	3875	142	75
Independent F (Ohio)	2385	Cont N	3¾x5	22.5	L	G	Lng	PT	F	Strm	G	.....	Full	DP	Eis	.....	Full	U	3	Ster	Math	W	Wis	.....	8.2	33 1	Ros	36x3½	36x5	.....	.....	3400	140	85
Indiana 12	.....	Wau BUX	3¾x5¼	22.5	L	C	McC	Fin	F	Strm	G	Wau	B.B.	DP	Eis	.....	B-Li	A	3	Spic	Shel	W	Shel	½Fl	7.8	31.2	Woh	34x3½	34x5	Bim	.....	4100	134	66
International 31	1850	Own	3½x5¼	19.6	L	C	Own	Fin	FS	Ens	G	Own	Own	DP	Bos	Own	Own	A	3	Own	.....	I	Own	D	8	26.5	Own	36x3½	36x4	Own	.....	3190	128	50
Kalamazoo G-1	2495	Cont N	3¾x5	22.5	L	T	.....	C	FS	Strm	V	Pier	Full	D	Con	Dy	Full	A	..	Acm	Shel	W	Wis	½Fl	8.5	41	Ros	34x4	34x5	Bim	.....	4450	144	80
Kalamazoo G	2800	Cont J4	3¾x5	22.5	L	P	GO	PT	F	Strm	V	Mon	Full	D	Bos	Dy	Ful	A	4	Acm	Shel	W	Wis	½Fl	8.2	41	Ros	36x4	36x6	Bim	.....	5080	144	80
Kearns 1½	2200	H-Sp 7000	3½x5	19.6	L	T	Own	H	FS	Zen	V	Pier	B.B.	DD	Ber	Dy	G-Le	U	3	ME	Math	I	Torb	D	8	24	Lav	34x3½	34x6	Way	.....	3400	136	60
Kelly-Springfield K31	2900	Own	3¾x5¼	22.5	L	C	Lng	Fin	F	Zen	G	Pier	Own	C	Eis	W	Covt	A	3	Own	Per	C	Own	D	8.6	31.58	Gem	36x3½	36x6	StM	.....	4420	Op	89
Kelly-Springfield K34	2900	Own	3¾x5¼	22.5	L	C	Lng	Fin	F	Zen	G	Pier	B.B.	D	Eis	W	Covt	A	3	Spic	Per	W	Shel	½Fl	8.6	31.78	Gem	36x3½	36x6	StM	.....	4670	Op	89
Kissel General Utility	1975	Own 40000	3⅞x5½	24.1	L	C	McC	PT	S	Strm	V	Pier	W-Gr	DP	Eis	.....	W-Gr	U	3	Spic	Mat	W	Shel	½Fl	7.8	28.5	Jac	36x3½	36x5	Pru	.....	4100	152	70.5
Kleiber A	.....	Cont C4	4⅛x5¼	27.2	L	C	Per	C	FS	Strm	G	.....	.....	WD	Bos	.....	B-Li	A	4	Spic	.....	W	Timk	¾Fl	7.1	37.51	Ros	36x3½	36x6	Smi	.....	5200	143	75
*Koehler D	1995	H-Sp	3½x5	19.6	L	T	Own	PT	F	Zen	G	Sim	B-Li	D	Spl	.....	.....	U	3	.....	Math	W	Dun	½Fl	7.25	.....	Lav	34x3½	34x5	Way	.....	3600	137	70
Larrabee-Deyo U	2400	Cont N¾	3¾x5	22.5	L	C	Bus	Fin	S	Sheb	G	Sim	B-Li	DD	Bos	.....	B-Li	U	3	.....	Mer	W	Shel	½Fl	7.6	25.5	Ros	34x3½	34x5	Hoo	.....	3600	138	....
Luedinghaus W	2490	Wau BUX	3¾x5¼	22.5	L	G	Own	Pit	FS	Sheb	G	Wau	B.B.	D	Spl	.....	Det	U	3	Spic	Tut	W	Wis	½Fl	8.6	26.6	Lav	34x3½	34x5	StM	.....	4100	144	75
Maccar L	2700	Cont C4	4⅛x5¼	27.2	L	C	Own	Fin	FS	Strm	G	Mue	B-Li	DD	Eis	.....	B-Li	U	4	Spic	Mer	W	Timk	½Fl	8.75	46.81	Ros	36x4	36x6	Day	Fir	4800	150	66
Mack AB1½	3000	Own AB	4 x5	25.6	L	C	Own	C	S	Sheb	G	Own	Own	DD	Tea	.....	Own	U	4	Spic	Mer	C	Own	D	6.9	28.01	Own	36x4	36x3½†	Sch	.....	5000	Op	68
Mack AB1½	3450	Own AB	4 x5	25.6	L	C	Own	C	S	Sheb	G	Own	Own	DD	Tea	.....	Own	U	4	Spic	Mer	R	Own	Flot	7.6	34.09	Own	36x4	36x3½†	Sch	.....	5100	Op	68
Master JW	2690	Buda OU	4⅛x5½	27.2	L	C	Chic	PT	S	Mas	V	McC	Full	DP	Eis	.....	Full	U	3	Spic	Det	W	Timk	½Fl	7.7	31	Ros	34x3½	34x5	Pru	.....	3900	142	78
*Maxwell	.....	Own	3⅞x4½	21	L	C	Own	PT	FS	Eag	G	.....	Own	C	AtK	.....	Own	U	3	Spic	Tut	W	Own	½Fl	7.25	34.4	Own	35x5	35x5	Kel	Fir	2385	124	50
Menominee H	.....	Wis EAU	4 x5	25.6	L	C	Own	Fin	FS	Strm	G	Mon	Det	DP	Eis	Opt	Cott	U	3	Spic	Tut	W	Wis	.....	8.25	30.36	Ros	36x3½	36x5	Stn	Fir	4220	144	74
Moline 10	.....	Own NT	3½x5	19.6	H	T	Mod	C	F	Till	G	Phar	.....	DP	Spl	.....	Own	U	3	Arv	Math	I	Torb	D	8	38	Ros	34x5*	36x6*	.....	Fir	.....	130	....
Moreland 21B	2800	Cont K4	4⅛x5¼	27.2	L	C	Own	C	F	Mas	P	.....	Own	DD	Spl	.....	Own	A	4	Ther	US	W	Timk	½Fl	7	33.88	Ros	36x3½	36x6	Smi	....	4900	126	....
Napoleon 11	1860	Vict	3½x5	19.6	H	T	Own	PT	F	Sheb	G	.....	Full	D	Con	AL	Full	U	3	Bld	Math	I	Torb	D	8	24	Lav	35x5*	36x6*	Roy	Fir	3450	133	65
*Nelson-LeMoon G1½	.....	Cont H4	4⅛x5¼	27.2	L	C	Chic	Fin	F	Strm	G	Phar	B-Li	DD	Bos	W	B-Li	U	3	Own	Tut	W	Timk	½Fl	7	.....	Lav	36x3½	36x6	Pru	Gdy	3400	Op	80
Noble B30	2100	Buda CTU	3¾x5¼	22.5	L	C	Chic	Fin	F	Strm	G	Pier	Full	DD	Eis	W	Full	U	3	M-E	Tut	W	Shel	½Fl	8.7	31.1	Lav	36x3½	36x5	Bim	Fir	4680	156	85
Norwalk	2025	Lyco K	3½x5	19.6	L	T	Stan	C	FS	Zen	V	.....	B.B.	D	Del	Dy	G-Le	U	3	UM	SPar	W	Shel	¾Fl	7	.....	CAS	34x3½	34x5	E&O	Fir	3200	143	75
Norwalk 35 E Special	2285	Buda CTU	3¾x5¼	22.5	L	G	Stan	C	FS	Zen	V	.....	B.B.	D	Del	Dy	G-Le	U	3	Spic	Stan	W	Shel	¾Fl	7.2	.....	Det	34x4*	34x5	E&O	Fir	3450	150	43
O. K .1½T	2675	Buda ITU	4 x5½	25.6	L	C	R-T	PT	FS	Zen	V	Pier	Full	DD	Eis	.....	Full	U	3	Hart	Cham	W	Wis	½Fl	8.25	24.8	Ros	36x3½	36x5	Bim	.....	4310	146	....
Ogden A1	.....	Cont N	3¾x5	22.5	L	T	Chic	Fin	FS	Strm	G	Pier	B-Li	DD	Bos	.....	B-Li	U	3	M-E	Tut	W	Timk	½Fl	8.75	.....	Gem	36x3½	36x5	Stn	.....	3400	136	70
Old Reliable A	2350	WisEU	4 x5	25.6	L	C	Chic	PT	FS	Strm	V	Mon	Full	DD	Bos	Op	Full	U	3	Spic	Shel	W	Shel	½Fl	7.7	24.94	Ros	34x3½	36x6	StM	.....	4150	138	90
Paige 52-19	2880	HinHAA400	4 x5¼	25.6	L	C	Own	Fin	F	Strm	V	Hink	B-Li	DD	Bos	.....	B-Li	A	4	Spic	Per	W	Timk	½Fl	7.7	37.51	Ros	34x3½	34x5	Own	Fir	4000	140	85
Power F	.....	Hink	4 x5¼	25.6	L	G	GO	PT	F	Zen	V	Hin	Full	DD	Eis	W	Full	A	4	Arv	Row	W	Vul	½Fl	7.75	37.2	Ros	36x6*	40x8*	StM	Fir	5300	150	69
Premocar	.....	Lyc-K	3½x5	19.6	L	T	.....	C	S	Zen	V	.....	BB	.....	Del	Dyn	G-L	U	3	Spic	Shel	W	Timk	½Fl	7	.....	Dit	36x6	36x6	.....	Fir	4200	130	70
Rainier R16	2490	Cont N	3¾x5	22.5	L	T	Har	H	FS	Zen	V	Mon	B-Li	DP	Eis	.....	B-Li	U	3	Hart	Per	W	Shel	.....	7.8	.....	Lav	34x3½	34x5	.....	Fir	3600	147	80
Reliance 10A	2400	Buda ITU	4 x5½	25.6	L	C	Bus	PT	FS	Strm	G	Pier	Full	DD	Eis	.....	Full	U	4	Pet	Shel	P	Badg	D	6.6	26.4	Ros	36x3½	36x5	Bim	Gdy	4500	150	90
Republic 11X	1795	Cont N3¾	3¾x5	22.5	L	C	Own	C	FS	Strm	G	Rug	Full	DD	Bos	.....	Full	U	4	Hart	Math	I	Torb	D	8	18.84	Jac	34x4	34x6	Nor	Fir	3400	144	....
Rowe CW1½	3000	Wis CAU	3¾x5	22.5	L	C	Fed	H	F	Zen	G	Sim	B-Li	DD	Bos	.....	B-Li	U	4	Spic	Shel	W	Shel	½Fl	6.5	26	Ros	36x6*	36x6*	Hoo	.....	3800	133	69.1
Ruggles 20	.....	Cont N	3¾x5	22.5	L	T	Per	C	FS	Strm	G	.....	B-Li	DD	Bos	Dyn	B-Li	U	3	Spic	Det	B	Col	¾Fl	5.12	20.48	Jac	34x5*	34x5*	Nor	Fir	2950	124	82
Rumely A	2720	Buda CTU	3¾x5¼	22.5	T	G	Mod	ZZT	F	Strm	G	Pier	Full	DP	Ber	.....	Full	U	3	Bld	Mat	W	Shel	½Fl	7.8	31.2	Gem	36x3½	36x5	Mot	Gdy	4100	144	75
Sandow CG	2590	Cont N¾	3¾x5	22.5	L	T	.....	Fin	FS	Strm	G	.....	.....	DP	Eis	.....	Full	U	3	Spic	GC	W	Shel	.....	7.8	23	Ros	34x3½	34x5	StM	.....	3300	135	70
Schwartz BW	2600	Buda CTU	3¾x5¼	22.5	L	C	Fed	H	F	Strm	G	Mon	Full	DP	Bos	.....	Full	U	3	M-E	Row	W	Shel	½Fl	7.8	31.2	Ros	34x3½	34x6	Sch	Fir	4400	140	....
Selden 1½A	2360	Cont N	3¾x5	22.5	L	C	Lng	Fin	FS	Strm	G	Pier	B-Li	D	Eis	.....	B-Li	U	3	Spic	Per	W	Timk	½Fl	7	23.31	Lav	34x3½	34x5	Arc	.....	3560	137	57
Service 220	.....	Buda R U	3½x5½	19.6	L	T	.....	Fin	FS	Strm	V	.....	Full	DD	Eis	.....	Full	U	3	Arv	Shel	W	Timk	½Fl	7.75	23.25	Ros	34x3½	34x5	Bim	.....	3450	137	65
*Signal H	2450	Cont C4	4⅛x5¼	27.2	L	C	McC	Fin	FS	Strm	G	Pier	B-Li	DD	Eis	.....	B-Li	A	4	Spic	Mat	W	Timk	½Fl	7.75	31	Ros	34x4	36x6	St.M	.....	4760	146	66
Southern 15	2590	Cont N	3¾x5	22.5	L	C	R-T	PT	S	Zen	G	Pier	Full	DD	Bos	.....	Full	U	3	.....	Shel	W	Shel	.....	.....	.....	Ros	36x6	38x7	.....	.....	.....	144	70
*Sterling 1½	2885	Ster FU	4x5¾	25.6	L	C	Own	PT	F	Zen	V	Wau	B-Li	DD	Eis	.....	B-Li	U	4	Spic	Mat	W	Timk	½Fl	7	37.45	Ros	36x3½	36x5	Pru	.....	5130	142	94
*Stewart 9	1790	Cont N¾	3¾x5	22.5	L	C	Bus	PT	FS	Zen	G	.....	Full	DP	Eis	.....	Full	U	3	Hart	Det	I	Cl	D	7.6	22.8	Gem	34x3½†	34x5†	Way	Fir	3440	140	70
Stoughton B	2350	Wau BUX	3¾x5¼	22.5	L	C	Own	Fin	FS	Strm	G	Wau	B-Li	DD	Eis	.....	B-Li	U	3	Ther	Shel	W	Shel	½Fl	7.8	31.2	Lav	36x3½	36x5	Bim	Gdy	3800	140	71
*Tiffin GW	2100	Cont C4	4⅛x5¼	27.2	L	C	Own	Fin	FS	Sheb	G	Pier	Full	DD	Bos	W	Full	U	3	Pet	Kal	W	Shel	.....	7.7	23.25	Ros	36x3½	36x5	Smi	.....	3750	135	80
Tower J1½	2900	Cont C4	4⅛x5¼	27.2	L	C	Own	PT	S	Zen	G	.....	Full	DP	Eis	.....	Full	U	3	Bld	Det	W	Timk	½Fl	7.25	29	Ros	35x5*	38x7*	Pru	Fir	4520	142	70
Traffic-Speedboy	1695	Cont N4	3¾x5	22.5	L	T	Own	C	FS	Cart	G	.....	Covt	DP	Bos	.....	Covt	U	3	Ther	Det	I	Russ	D	6.15	22.5	Own	35x5*	35x5*	Opt	Fir	3100	128	75
Transport 30	1995	Cont N-3¾	3¾x5	22.5	L	T	Mod	C	FS	Strm	G	Sim	Full	DD	Eis	.....	Full	U	3	Hart	Det	I	Cl	D	7.6	30.4	Jac	36x3½	36x5	.....	Fir	3450	140	70
Traylor B	2390	Buda WU	3¾x5½	22.5	L	C	GO	Fin	F	Zen	G	Sim	Covt	DD	Spl	.....	Covt	U	3	M-E	Mer	W	Shel	½Fl	7.8	.....	Ros	34x3½	34x6	Sch	.....	4000	140	75
Triangle A	2350	Wau BUX	3¾x5¼	22.5	L	C	Per	ZZT	FS	Strm	G	Wau	Full	DD	Eis	.....	Full	U	3	UP	Det	I	Cl	D	7.25	21	Gem	34x3½	34x6	Roy	Fir	3750	144	60
Triumph	1950	Buda MU	3¾x5½	21	L	C	Mod	PT	F	King	V	Pier	B.B.	D	Spl	.....	Cott	U	4	UP	Tut	W	Wis	½Fl	7.25	.....	Lav	36x3½	36x5	Stn	Stn	.....	132	70

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Trade Name and Model	Chassis Price	ENGINE DETAILS: Make and Model Number 4 Cylinder unless otherwise noted	Bore and Stroke	N. A. C. C. Horsepower	Valve Arrange't	How Cooled	Radiator (Make)	Radiator (Type)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Clutch (Make)	Clutch (Type)	Ignition System	Engine Starter	GEARSET: Make	Location	Speeds	Universal (Make)	Springs (Make)	REAR AXLE: Final Drive	Make	Type	Total Gear Reduction in High	Total Gear Reduction in Low	Steering Gear (Make)	TIRES, WHEELS, RIMS: *Pneumatic †Dual Front	Rear	Wheels (Make)	Rim Equipment	Chassis Weight	Wheelbase	Pr. Cent of Weight on Rear Wheels
2 Ton—Con'd		1		2	3	4	5	6	7	8	9	10	11	12	13	14	15		16	17	18	19	20			21			22	23			
Southern 20	2990	Buda HTU	4¼x5½	28.9	L	T	Own	PT	S	Zen	...	Pier	Full	DD	Bos	.....	Full	U	4	.....	Shel	W	Shel	.....	.....	.....	Ros	34x4	40x8	.....	.....	.....	150	70
*Sterling 2	3085	Ster FU	4x5¾	25.6	L	C	Own	PT	F	Zen	V	Wau	B-Li	DD	Eis	.....	B-Li	U	4	Spic	Mat	W	Timk	Flot	7.7	41.19	Ros	36x4	36x6	Pru	.....	6020	142	94
*Stewart 7	2090	Cont C2.	4⅛x5¼	27.2	L	G	Bus	Fin	FS	Zen	G	Pier	Full	DP	Eis	.....	Full	U	3	Hart	Det	I	Cl	D	9	27	Ros	34x4†	34x7†	Cla	Fir	4460	156	72
Stoughton D	2800	Her CU3	4 x5½	25.6	L	C	Own	Fin	F	Strm	G	Dup	B-Li	DD	Eis	.....	B-Li	U	4	Ther	Shel	W	Shel	½Fl	8.66	35	Lav	36x4	36x7	Bim	Gdy	4600	140	70
Superior E	2600	Cont C2	4⅛x5¼	27.2	L	A	Idl	C	F	Strm	V	Pier	Full	DD	Eis	.....	Full	U	3	Arv	Tut	I	Torb	D	8	23.2	Ros	36x4	36x6	Sch	Fir	3600	144	75
*Titan 2½	2850	.....	4 x5	25.6	L	C	BW	ZZT	F	Strm	G	Sim	B.B.	DD	Eis	.....	Cott	U	4	Pet	Shel	I	Cl	D	8	42	Woh	34x4	36x7†	Bim	.....	5300	156	70
Traffic 4000C	1595	Cont N4	3¾x5	22.5	L	T	Own	C	FS	Cart	G	.....	Covt	DP	Bos	.....	Covt	U	3	Ther	Det	I	Russ	D	7	25.62	Own	34x3½	34x5	Opt	Fir	3175	132	85
Traylor C	2850	Buda ITU	4 x5½	25.6	L	P	GO	Fin	F	Zen	G	Pier	Covt	DD	Spl	.....	Covt	U	3	M-E	Mer	W	Shel	½Fl	7.75	.....	Ros	36x4	36x7	Sch	.....	5100	146	75
Triangle C	2700	Wau BUX	3¾x5¼	22.5	L	C	Per	ZZT	FS	Strm	G	Wau	Full	DD	Eis	.....	Full	U	3	UP	Det	I	Cl	D	9.1	27	Gem	36x4	36x7	Roy	Fir	4200	147	60
Triumph 2	2550	Buda CTU	3¾x5¼	22.5	L	C	Mod	PT	F	Kng	V	Pier	B.B.	D	Spl	.....	Cott	U	4	UP	Tut	W	Wis	½Fl	7.75	40.3	Lav	36x4	36x7	Stn	Stn	5000	144	70
*Ultimate AJ	3250	Buda HTU	4¼x5½	28.9	L	C	Own	PT	F	Strm	G	Pier	B-Li	DD	Eis	Bos	B-Li	U	4	Spic	Shel	W	Shel	.....	6.5	.....	Ros	35x5*	38x7*	Jon	Fir	4500	140	72
Ultimate AJL	3300	Buda HTU	4¼x5½	28.9	L	C	Own	PT	F	Strm	G	Pier	B-Li	DD	Eis	Bos	B-Li	U	4	Spic	Shel	W	Shel	.....	6.5	.....	Ros	35x5*	38x7*	Jon	Fir	4590	156	72
Vim 22	3150	Her C2	3¾x5½	22.5	L	P	MeC	Fin	F	Zen	G	Dup	B-Li	D	Spl	....	B-Li	U	4	Spic	Shel	W	Shel	.....	7.7	.....	Gem	36x4	36x6	Smi	....	4700	142	....
*Walter N	3750	Own FU	4 x5¾	25.6	L	C	Bus	PT	F	Strm	G	Wau	B-Li	D	Eis	W	B-Li	A	4	Own	.....	.....	Own	Flot	7.25	36	Gem	36x4	36x7	.....	.....	5000	144	70
White 20	3250	Own	3¾x5½	22.5	L	C	.....	C	FS	Own	G	.....	Own	D	.....	.....	Own	A	4	Own	.....	R	Own	½Fl	.....	.....	Own	36x4	36x7	.....	Fir	4500	157	....
Wichita M	2800	Wau BX	3¾x5½	22.5	L	G	.....	PT	F	Strm	G	Wau	Own	C	Wag	.....	B-Li	A	4	Own	Det	W	Shel	½Fl	8.6	45.03	Ros	36x3½	36x6	Bim	Fir	4400	144	80
Winther 49	3250	Wis EAU	4 x5	25.6	L	G	Brm	PT	F	Mas	V	.....	B.B.	DP	Eis	W	B-Li	A	4	Bld	Math	I	Cl	D	9	39	Ros	34x4	34x4†	Own	.....	5300	150	80
Wisconsin (Loganville)	1700	GBS	3¾x4¼	22.5	L	T	.....	.....	FS	Sheb	...	.....	.....	WP	Bos	Dy	Det	U	3	UP	Har	I	Torb	D	8.	.....	Lav	34x5*	36x6*	.....	.....	3200	136	....
Witt Will P	2750	Cont C4	4⅛x5¼	27.2	H	G	Mod	Opt	FS	Zen	G	Pier	B-Li	DD	Eis	.....	B-Li	U	3	Spic	Del	W	Tim	Flot	7.75	.....	Ros	36x3½	36x7	Arc	.....	5000	144	70
Wolverine J2	.....	Cont J	3¾x5	22.5	L	C	Lng	Fin	F	Strm	G	Phar	Full	DD	Eis	Bos	Full	U	3	.....	Am	I	Russ	D	8.8	35.2	Gem	34x4	34x7	Hay	Gdy	4300	148	72
Young 6	2750	Cont K-4	4⅛x5¼	27.2	L	C	Whee	Fin	F	Sch	G	.....	B-Li	D	Eis	.....	B-Li	U	3	Spic	Math	W	Timk	Flot	.....	.....	Ros	36x4	36x7	StM	....	4500	144	75
2½ Ton																																		
Acason H	.....	Wau CU	4¾x5¾	30.6	L	P	Can	C	FS	Sheb	V	Wau	Det	.....	Eis	.....	Cott	A	4	Bld	Det	W	Timk	Flot	7.75	40.3	Ros	36x4	36x8	Sch	Opt	5400	150	....
Ace 2½	.....	Buda HU	4¼x5½	28.9	L	C	Mod	ZZT	F	Zen	V	Pier	Full	DP	Eis	W	Full	A	4	UM	Math	W	Timk	Flot	8.50	34	Ros	36x4	36.7	Day	Fir	5630	156	80
Acme AC	.....	Cont L4	4½x5½	32.4	L	C	.....	Fin	F	Rayf	V	Dup	B.B.	DP	Eis	DL	Cott	U	4	Bld	Det	W	Timk	Flot	6.	31.2	Ros	36x4	36x7	Bim	.....	5050	156	50
American	3350	Wis	4 x6	25.6	L	G	GO	Fin	F	Strm	G	Own	Det	D	Apo	.....	Cott	U	4	Acm	SP	W	Thom	Flot	8.33	.....	Ros	36x4	34x4†	.....	.....	5000	158	....
Apex E	2695	Buda HU	4¼x5½	28.9	L	C	GO	C	F	Strm	V	Dup	Full	D	Eis	Op	Full	U	3	Bld	Det	I	Torb	D	9	27	Lav	36x4	36x7	Roy	Fir	4500	150	70
Armleder HW	.....	Buda HTU	4¼x5½	28.9	L	P	Lng	Fin	F	Zen	G	Phar	B-Li	DD	Bos	W	B-Li	U	4	Spic	Math	W	Timk	Flot	9.25	49.5	Ros	36x4	36x7	StM	.....	4900	148	....
Armleder HW	.....	Cont C4	4⅛x5¼	27.2	L	P	Lng	Fin	S	Zen	G	.....	B-Li	DD	Bos	.....	B-Li	U	4	Spic	Math	W	Timk	Flot	9.25	49.5	Ros	36x4	36x7	StM	.....	4900	148	....
Atco A	.....	Bud HU	4¼x5½	28.9	L	C	Chic	PT	F	Strm	G	Pier	Full	D	Eis	.....	Full	A	4	Hart	Shel	W	Wis	.....	8.7	41.6	Ros	36x4	36x7	Smi	.....	4900	150	....
Atterbury 7CX LWB	3275	Cont C4	4⅛x5¼	27.2	L	C	Own	Fin	S	Zen	G	Mon	B-Li	DD	Ber	.....	B-Li	U	4	Spic	SP	W	Timk	Flot	9.25	44.77	Gem	36x4	36x4†	Arc	Fir	5520	171	74.5
Atterbury 7CX STD	3175	Cont C4	4⅛x5¼	27.2	L	C	Own	Fin	S	Zen	G	Mon	B-Li	DD	Ber	.....	B-Li	U	4	Spie	SP	W	Timk	Flot	9.25	44.77	Gem	36x4	36x4†	Arc	Fir	5360	153	74.5
Available 2½	3160	Her CU3	4 x5½	25.6	L	C	Chic	Fin	FS	Strm	V	Pier	B-Li	DD	Bos	.....	B-Li	A	4	M-E	Tut	W	Timk	Flot	7.75	40.3	Ros	36x4	36x8	Sch	.....	4750	152	75
Bell O	2550	Buda	4¼x5½	28.9	L	C	Chic	PT	F	Strm	V	Dup	B.B.	DP	Eis	.....	Det	U	3	UP	Det	I	Russ	D	8	38.4	Gem	34x4	34x7	Bim	Fir	4200	146	65
Bessemer J2	.....	Cont C4	4⅛x5¼	27.2	L	C	.....	C	FS	Strm	G	Pier	B.B.	DP	Bos	.....	B-Li	A	4	Arv	Per	I	Torb	D	8	32	Ros	36x4	36x4†	Sch	Fir	4600	158	67
Bridgeport 2½B	2850	Buda HTU	4¼x5½	28.9	L	G	Own	Fin	FS	Strm	G	Pier	B.B.	D	Eis	.....	B-Li	U	4	Hart	Per	W	Timk	Flot	8.25	.....	Ros	36x4	36x4†	Jon	Fir	5500	156	70
*Brinton D	2250	Cont C4	4⅛x5¼	27.2	L	C	Chic	PT	F	Strm	V	Pier	B-Li	D	Bos	.....	B-Li	U	3	Spic	Tut	W	Timk	Flot	.....	33.6	Ros	36x4	36x6	Smi	.....	4600	150	....
Brockway K5	.....	Cont K4	4⅛x5¼	27.2	L	C	Bus	Fin	F	Strm	V	Phar	B-Li	DD	Eis	.....	B-Li	A	4	Spic	Mer	W	Timk	Flot	7.75	41.5	Gem	36x4	36x8	Hoo	.....	5260	153	70
Capitol H 2½	3700	WisUAU	4¼x6	28.9	L	C	GO	Fin	F	Strm	G	Sim	Det	DD	Bos	.....	Cott	U	4	Spic	Sp	W	Wis	½Fl	8.66	45	Ros	36x4	36x8	.....	.....	5200	156	85
Capitol K2½	4250	Wis UAU	4¼x6	28.9	L	C	GO	Fin	F	Strm	G	Sim	Det	DD	Bos	W	Cott	U	4	Spic	SP	W	Wis	½Fl	7.25	37.7	Ros	36x6*	42x9*	.....	Fir	5100	156	85
Chicago C2½	.....	Her CU3	4 x5½	25.6	L	C	.....	PT	F	Strm	G	Sim	B-Li	D	Bos	.....	B-Li	U	4	Pet	Math	W	Timk	Flot	8.5	34	Gem	36x4	36x7	Opt	Stn	4500	156	....
Clydesdale 65EX	3450	Cont	4⅛x5½	32.4	L	C	Own	PT	FS	Zen	G	Own	B-Li	DD	Bos	.....	B-Li	A	4	Spic	Stan	W	Timk	Flot	8.5	41.1	Ross	36x4	36x7	Smi	.....	5800	163	73
Clydesdale 65 X	3250	Cont	4⅛x5¼	27.2	L	C	Own	PT	FS	Zen	G	Own	B-Li	DD	Bos	.....	B-Li	A	4	Spic	Stan	W	Timk	Flot	8.5	41.1	Ros	36x4	36x7	Smi	.....	5700	163	73
Collier 22	.....	Cont C4	4⅛x5¼	27.2	T	P	Lng	PT	FS	Zen	V	Pier	Full	DP	Eis	.....	Full	U	4	UP	Math	W	Timk	Flot	8.5	40.8	Ros	36x4	36x4†	Bim	Fir	5445	165	70
Columbia G	2850	Hink HAA	4 x5¼	25.6	L	P	Lng	Fin	F	Strm	V	Hink	M-E	DP	Spl	...	Cott	A	4	Spic	Per	I	Russ	D	9.5	48.8	Own	36x4	36x7	Det	Fir	4400	148	40
*Commerce 18	2495	Cont C	4⅛x5¼	26.2	L	P	Lng	Fin	S	Zen	V	.....	B&B	DP	Eis	Bj	B-Li	U	4	Spic	Am	I	Torb	D	7	28.8	.....	36x6	38x7	.....	Fir	4150	149	90
Concord B	3600	Buda HTU	4¼x5½	28.9	L	C	Bus	PT	F	Zen	G	Mon	B-Li	DP	Eis	.....	B-Li	U	4	Spic	Per	W	Timk	Flot	9.25	37	Ros	36x4	36x8	Arc	Fir	5400	150	70
*Corbitt B-22	3000	Cont C4	4⅛x5¼	27.2	L	C	MeC	Fin	FS	Strm	V	Sim	B-Li	DD	Eis	.....	B-Li	U	4	Hart	Shel	W	Shel	½Fl	8.75	35	Ros	36x4	36x7	Bim	Fir	5325	152	75
Dart M	.....	Buda HU	4¼x5½	28.9	L	C	Own	C	F	Zen	G	Pier	Full	DD	Eis	.....	Full	U	4	Spic	Per	W	Own	.....	8.5	40.8	Ros	36x4	36x7	Pru	.....	4800	150	80
Day Elder C	2750	Buda HTU	4¼x5½	28.9	L	C	Bus	Fin	F	Zen	G	Mon	Covt	DD	Eis	.....	Covt	U	4	Hart	IC	W	Shel	½Fl	8.75	41.56	Gem	36x4	36x7	Jon	Fir	5000	150	70
Dependable E 2½	2950	Buda HTU	4¼x5½	28.9	L	C	Lng	Fin	F	Zen	V	Mon	Full	DD	Spl	AL	Full	A	4	Acm	Per	W	Wis	½Fl	8.6	40	Ros	36x4	36x7	Bim	Fir	5800	155	70
Doane 2½	4100	Wau RU	4¼x5¾	28.9	L	C	Own	PT	S	Mas	G	Wau	B-Li	DD	Bos	.....	B-Li	U	3	Own	Own	C	Own	D	7.7	30.8	Lav	36x5	36x7	Wes	.....	5000	147	79
*Erie 2½	.....	Buda ETU	4¼x5½	28.9	L	C	Fed	C	FS	Strm	G	Dup	Full	D	Bos	.....	Full	A	4	Spic	Per	W	Shel	.....	7.75	15.3	Ros	36x4	36x8†	Way	Fir	5760	150	80
Facto	2295	Buda ETU	4¼x5½	28.9	L	C	Bus	PT	FS	Zen	V	Pier	Full	D	Spl	.....	Full	A	4	Spic	SP	W	Timk	Flot	7.75	33.9	Ros	36x4	36x8	Smi	Fir	5800	155	....
Gersix K	3500	Buda HTU	4¼x5½	28.9	L	C	Idl	C	F	Strm	V	Mon	B.B.	.....	Bos	.....	Cott	U	3	Bld	Tut	W	Own	.....	9.6	39	Ros	36x4	36x8	Jon	.....	5200	150	75
Giant 16	3150	Cont C4	4⅛x5¼	27.2	L	P	Own	.....	FS	Sheb	G	Mon	B-Li	DD	Eis	.....	B-Li	U	3	Spic	Math	W	Timk	Flot	8.8	29.09	Ros	36x4	36x7	Way	.....	4500	168	90
Giant 16	3050	Cont C4	4⅛x5¼	27.2	L	P	Own	.....	FS	Sheb	G	Mon	B-Li	DD	Eis	.....	B-Li	U	3	Spic	Math	W	Timk	Flot	8.8	29.9	Ros	36x4	36x7	Way	.....	4500	144	90
Hall 2½ Worm	.....	Cont C4	4⅛x5¼	27.2	L	P	Own	H	FS	Zen	G	Dup	B-Li	DP	Bos	.....	B-Li	U	3	Opt	Det	W	Timk	Flot	7.7	.....	Gem	36x4	36x4	Smi	.....	4825	156	....
*Hendrickson N	3150	Buda ETU	4¼x5½	28.9	L	C	Chic	Pt	F	Strm	G	McC	Full	D	Spl	.....	Full	A	4	Ther	Tut	W	Timk	Flot	7.7	37.2	Ros	36x4	36x7	Stn	.....	.....	Op	80
H. R. L., H.	3650	Hink HAA	4 x5¼	25.6	L	C	Fed	Fin	F	Zen	V	Hink	B-Li	DP	Bos	GD	B-Li	U	4	Spic	Shel	W	Shel	.....	8.75	30.	Ros	36x4	36x4†	Sch	Gdy	5310	154	....
Hurlburt 2½	.....	Buda HU	4¼x5½	28.9	L	G	Own	.....	F	Flch	G	Dup	B-Li	D	Eis	.....	B-Li	U	3	Spic	Per	W	Own	.....	.....	.....	Ros	36x4	36x4	Way	.....	5600	170	85
Huron-Michigan	.....	Buda ETU	4¼x5½	28.9	L	C	.....	Fin	F	Zen	V	Pier	B.B.	D	Bos	.....	Cott	U	4	Det	Det	I	Cl	D	8	41.6	Jac	36x6*	40x8*	AuW	Fir	.....	156	90
Independent HI (Iowa)	2940	Cont C4	4⅛x5¼	27.2	L	C	GC	PT	FS	Strm	V	.....	Full	DD	Bos	.....	Full	U	4	Bld	GC	I	Russ	D	10	.....	Lav	36x4	36x7	StM	Fir	4950	156	75
Independent H (Ohio)	3085	Cont K4	4⅛x5¼	27.2	L	G	Lng	PT	F	Strm	G	.....	Full	DP	Eis	.....	Full	A	4	Spic	Math	W	Wis	.....	9.6	39	Ros	36x4	36x8†	.....	.....	4600	148	85
*Indiana 25	.....	Own 38	4⅛x5½	27.2	L	C	MeC	Fin	F	Strm	G	Pier	B.B.	DP	Eis	.....	B-Li	A	4	Spic	Shel	W	Shel	½Fl	7.75	41.3	Woh	36x4	36x8	Day	.....	5850	156	73
*Kalamasoo H	3275	Wis TAU	4 x6	25.6	L	C	GO	PT	F	Strm	V	Pier	Full	D	Bos	Dy	Full	A	4	Acm	Shel	W	Shel	½Fl	8.75	42.8	Ros	36x4	36x8	Smi	.....	6200	160	80
Kelly Springfield K35	3250	Own	3¾x5¼	22.5	L	C	Lng	Fin	F	Zen	G	Pier	Own	C	Eis	W	Covt	A	3	Own	Per	C	Own	D	10.6	35.11	Gem	36x4	36x4†	StM	.....	5000	Op	89
Kelly Springfield K36	3250	Own	3¾x5¼	22.5	L	C	Lng	Fin	F	Zen	G	Pier	Own	C	Eis	W	Covt	A	3	Spic	Per	W	Shel	½Fl	10.3	34.02	Gem	36x4	36x4†	StM	.....	5145	Op	89
Kimball C	3975	Wis UAU	4¼x6	28.9	L	C	Eag	PT	F	Mas	V	Sim	B-Li	DP	Spl	W	B-Li	A	4	Spic	US	W	Shel	½Fl	7.75	37.31	Woh	36x4	36x8	Smi	Fir	5000	Op	66
Kissel Freighter	2875	Own 50000*	4¼x5½	28.9	L	C	MoC	PT	S	Strm	V	Pier	W-Gr	DP	Eis	.....	W-Gr	A	4	Spic	Mat	W	Timk	Flot	8.5	42.5	Jac	36x4	36x7	Pru	.....	5100	168	74
Kleiber B	.....	Cont E4	4½x5½	32.4	L	C	RT	PT	FS	Strm	G	Sim	.....	WD	Bos	.....	B-Li	A	4	Spic	.....	W	Timk	Flot	7.75	37.51	Ros	36x5	36x8	Sm	.....	6000	160	75

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Trade Name and Model	Chassis Price	ENGINE DETAILS: Make and Model Number 4 Cylinder unless otherwise noted	Bore and Stroke	N. A. C. C. Horsepower	Valve Arrange't	How Cooled	Radiator (Make)	Radiator (Type)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Clutch (Make)	Clutch (Type)	Ignition System	Engine Starter	GEARSET: Make	Location	Speeds	Universal (Make)	Springs (Make)	REAR AXLE: Final Drive	Make	Type	Total Gear Reduction in High	Total Gear Reduction in Low	Steering Gear (Make)	TIRES, WHEELS, RIMS: *Pneumatic †Dual Front	Rear	Wheels (Make)	Rim Equipment	Chassis Weight	Wheelbase	Pr. Cent of Weight on Rear Wheels
3 Ton—Con'd		1		2	3	4	5	6	7	8	9	10	11	12	13	14	15		16	17	18	19	20			21			22	23			
Traylor D.	3300	Buda HTU	4¼x5½	28.9	L	P	GO	Fin	F	Zen	G	Pier	M-E	DD	Spl	.....	Own	...	4	M-E	Mer	W	Shel	½ Fl	7.7	.....	Ros	36x4	36x8	Sch	.....	5850	150	75
Ultimate BL.	3850	Buda HTU	4¼x5½	28.9	L	C	Own	PT	F	Strm	G	Pier	B-Li	DD	Eis	Bos	B-Li	U	4	Spic	Shel	W	Shel	½ Fl	7.75	.....	Ros	36x4	36x8	Jon	Fir	5590	178	72
U. S., R.	.....	Own	4 x5¼	25.6	L	C	Lng	Fin	F	Strm	G	Own	B-Li	DD	Eis	Op	B-Li	A	4	Opt	Shel	W	Shel	½ Fl	8.7	41.5	Lav	36x4	36x4†	Sch	.....	5500	156	85
*Vim 23.	3950	Her M2	4¼x5½	28.9	L	C	McC	Fin	F	Zen	G	Dup	B-Li	D	Spl	.....	B-Li	A	4	Spic	Shel	W	Shel	.....	7.7	.....	Gem	36x5	36x5†	Smi	.....	6370	175	....
*Wichita RX.	3600	Wau CU	4¾x5¾	30.6	H	P	G	.....	F	Strm	G	Wau	Own	C	Wag	.....	B-Li	A	4	Own	Det	W	Shel	½ Fl	8.75	45.5	Ros	36x4	36x8	Smi	Fir	5900	160	80
3½ Ton																																		
Acason L.	.....	Wau CU	4¾x5¾	30.6	L	G	Can	C	FS	Sheb	V	Wau	Det	.....	Eis	.....	Cott	A	4	Bld	Det	W	Timk	Flot	8.75	48.5	Ros	36x5	36x5†	Smi	Opt	7000	180	....
Acme C.	.....	Cont L4	4½x5½	32.4	L	C	GO	Fin	F	Rayf	V	Dup	B.B.	DP	Eis	DL	Cott	A	4	Bld	Det	W	Timk	Flot	10.3	53.73	Ros	36x5	40x10	Bim	.....	6983	168	50
Apex F.	3975	Buda YTU	4½x6	32.4	L	C	GO	C	F	Strm	V	Dup	Full	D	Eis	Opt	Full	A	4	Bld	Det	I	Torb	D	10.5	.....	Woh	36x5	36x10	Roy	Fir	6940	168	....
Armleder KW.	.....	Buda YTU	4½x6	32.4	L	P	Own	Fin	S	Zen	G	Phar	B-Li	DD	Bos	....	B-Li	U	4	Spic	Math	W	Timk	Flot	10.33	55.25	Ros	36x5	36x5†	StM	.....	6900	156	....
Armleder K W.	.....	Cont E4	4½x5½	32.4	L	P	Own	Fin	S	Zen	G	.....	B-Li	DD	Bos	....	B-Li	U	4	Spic	Math	W	Timk	Flot	10.33	55.25	Ros	36x5	36x5†	StM	.....	6900	156	....
Atterbury 7D-LWB.	4075	Cont E4	4½x5½	32.4	L	C	Own	Fin	S	Zen	G	Mon	B-Li	DD	Bos	....	B-Li	U	4	Spic	Math	W	Timk	Flot	10.33	55.25	Ros	36x5	36x5†	StM	.....	6900	156	....
Atterbury 7D-Standard.	3975	Cont E4	4½x5½	32.4	L	C	Own	Fin	S	Zen	G	Mon	B-Li	DD	Ber	....	B-Li	U	4	Spic	SP	W	Timk	Flot	10.3	49.85	Gem	36x5	40x5†	Arc	Fir	7270	192	76
Autocar Y	4350	Own Y	4¼x5½	28.9	L	C	Own	Fin	S	Strm	G	.....	Own	DP	.....	.....	Own	A	4	.....	.....	R	Own	Flot	8.7	52.2	Ros	34x5	36x10	Hoo	.....	7000	120	65
Autocar B	4500	Own B	4¼x5½	28.9	L	C	Own	Fin	S	Strm	G	.....	Own	DP	.....	.....	Own	A	4	.....	.....	R	Own	Flot	8.7	52.2	Ros	34x5	36x10	Hoo	.....	7150	156	65
Available H3½	4175	Her MU3	4½x5½	32.4	L	C	Chic	Fin	FS	Strm	V	Pier	B-Li	DD	Bos	....	B-Li	A	4	M-E	Tut	W	Timk	Flot	10.33	49.99	Ros	36x5	40x5†	Sch	.....	6500	176	75
Belmont D.	.....	4 x6	25.6	L	G	.....	.....	.....	...	Zen	V	Pier	B.B.	DP	Eis	.....	.....	U	4	.....	Math	.....	.....	.....	.....	.....	.....	38x7*	42x9*	.....	.....	.....	162	....
Bridgeport 4C	3850	Buda YTU	4½x6	32.4	L	G	Own	Fin	FS	Strm	G	Pier	B.B.	D	Eis	....	B-Li	A	4	Hart	Per	W	Eat	.....	10	.....	Ros	36x5	36x10	Jon	Fir	9000	170	70
Brockway R-4	.....	Cont L4	4½x5½	32.4	L	C	Bus	Fin	F	Strm	G	Phar	B-Li	DD	Eis	....	B-Li	A	4	Spic	Mer	W	Timk	Flot	8.75	46.8	Gem	36x5	36x5†	Smi	.....	6800	164	70
Capitol M-3½	4425	Wis UAU	4¼x6	28.9	L	C	GO	Fin	F	Strm	G	Sim	Det	DD	Bos	....	Cott	U	4	Spic	SP	W	Wis	½ Fl	9	46.8	Ros	36x5	36x10	Smi	.....	6400	168	85
Chicago C3½	.....	Her MU3	4½x5½	32.4	L	C	.....	PT	FS	Strm	G	Sim	B-Li	D	Bos	....	B-Li	A	4	Spic	Stan	W	Timk	Flot	10.33	50	Gem	36x5	36x10	Opt	Sta	6900	168	....
Clydesdale 90.	4100	Cont	4½x5½	32.4	L	C	Own	PT	FS	Zen	G	Own	B-Li	DD	Bos	....	B-Li	A	4	Spic	Stan	W	Timk	Flot	10.33	55.2	Ros	36x5	40x10	Smi	.....	7500	170	78
Dart W.	.....	Buda YTU	4½x6	32.4	L	C	Own	C	F	Zen	G	Pier	Full	DD	Eis	....	Full	A	4	Spic	Per	W	Own	.....	8.7	52.5	Ros	36x5	36x10	Pru	.....	6740	160	75
Day Elder F.	3150	Cont E4	4½x5½	32.4	L	C	Bus	Fin	FS	Zen	G	Mon	B-Li	DD	Eis	....	B-Li	A	4	Hart	IC	W	Shel	½ Fl	10.25	41	Gem	36x5	36x5†	Jon	Fir	5750	165	70
Dependable G 3½	3550	Buda YTU	4½x6	32.4	L	C	Lng	Fin	F	Zen	V	Mon	Full	DD	Spl	AL	Full	A	4	Acm	Per	W	Wis	½-Fl	10	47.61	Ros	36x6	36x10	Bim	Fir	6000	160	75
Diamond T-K	3750	Hin	4¼x5½	28.9	L	C	GO	Fin	F	Strm	V	Own	Covt	DD	Bos	....	Covt	A	4	Spic	Math	W	Timk	Flot	8.8	44.36	Gem	36x5	36x5†	.....	.....	7250	170	....
Doane 3½	5100	Wau CU	4¾x5¾	30.6	L	C	Own	PT	F	Mas	G	Wau	B-Li	DD	Bos	....	B-Li	U	3	Own	Own	C	Own	D	9.5	38	Lav	36x5	36x5†	Wes	.....	7000	169	79
Dorris K7.	4400	Own	4¼x5½	28.9	H	H	McC	Fin	F	Strm	G	Own	Own	DP	Bos	....	W-Gr	A	4	Spic	Row	W	Timk	Flot	10.33	51.5	Ros	36x5	36x10	Smi	.....	6750	194	70
Duplex E.	4250	Buda TU	4¼x5½	28.9	H	L	Lng	ZZT	FS	Sheb	V	Dup	B-Li	DD	Eis	....	B-Li	A	4	Pet	Tut	I	Own	D	8	64	Woh	36x8	36x8	Pru	.....	6075	130	60
Federal WE.	3150	Cont E4	4½x5½	32.4	L	C	Own	Fin	FS	Zen	G	Phar	B.B.	DP	Eis	....	Own	A	4	Spic	Math	W	Timk	Flot	10.33	51.56	Gem	36x5	36x5†	Smi	Fir	6990	156	74.5
Garford 77D	.....	Buda YTU	4½x6	32.4	L	C	Own	Fin	F	Strm	G	Sim	.....	DD	Spl	....	Own	A	4	Spic	Per	W	Timk	Flot	8.7	.....	Ros	36x5	36x5†	Smi	.....	7700	162	....
Giant 17	4150	Cont E4	4½x5½	32.4	L	C	Own	.....	B	Strm	G	Mon	.....	DD	Eis	....	B-Li	A	4	Spic	Per	W	Timk	Flot	10.25	49.61	Ros	36x5	36x5†	Smi	.....	6800	176	70
G. M. C. K-71	4250	Own	4½x6	32.4	L	C	Own	Fin	F	Mar	G	Own	Own	DD	Eis	Opt	Own	A	7	Own	Det	W	Timk	Flot	8.75	75.2	Own	36x5	40x5†	Own	.....	7714	Op	Opt
*Gramm Bernstein 35P	4225	Hink HA200	4½x5½	32.4	L	B	G	Own	Fin	F	Strm	V	Hink	Own	DD	Eis	NE	Own	A	4	Own	Per	W	Shel	½ Fl	9.5	45	Ros	36x6*	42x9*	Smi	.....	6800	150	91.3
Hal-Fur B.	3000	Hin HA-500	4¼x5½	28.9	L	C	GO	PT	F	Strm	V	Hin	B.B.	P	Bos	W	B-Li	A	4	Pet	Per	W	Timk	Flot	7.75	57.4	Gem	36x6	Opt	Smi	Fir	5000	Op	70
Hal-Fur F.	4000	Hin AA 1600	4½x5½	32.4	L	H	G	GO	PT	F	Strm	V	Hin	B.B.	DP	Bos	W	Own	A	4	Pet	Mer	W	Timk	Flot	10.33	72	Gem	36x6	40x10	.....	.....	6500	180	70
Hall 3½ Worm.	.....	Cont E4	4½x5½	32.4	L	T	Own	PT	FS	Zen	G	Dup	B-Li	DP	Bos	....	B-Li	A	..	Opt	Det	W	Timk	Flot	10	.....	Gem	36x5	36x5†	Smi	.....	6825	144	....
Hurlburt.	.....	Buda YTU	4½x6	32.4	L	C	Own	.....	FS	Flch	G	Dup	B-Li	D	Eis	....	Full	A	4	Ther	Tut	W	Timk	Flot	10	49.6	Ros	36x5	36x5..	Stn	.....	.....	Op	80
*Independent K, (Ohio)	3985	Cont L4	4½x5½	32.4	L	C	G	Lng	PT	FS	Strm	G	.....	Full	DP	Eis	....	Full	A	4	Spic	Per	W	Own	Flot	8.7	41.91	Ros	36x5	36x5	Way	.....	7400	156	....
Indiana 35.	.....	Own 40	4⅜x5½	30.6	L	C	G	McC	Fin	F	Strm	G	Pier	B.B.	DP	Eis	....	Full	U	4	Spic	Mat	W	Wis	....	10	48	Ros	36x5	36x10†	.....	.....	5400	160	85
Jackson B.	3850	Cont E4	4½x5½	32.4	L	C	G	Lng	Fin	FS	Strm	V	Pier	B.B.	DP	Eis	....	B-Li	A	4	Spic	Shel	W	Shel	½ Fl	10.2	54.84	Woh	36x5	36x5†	Smi	.....	7050	160	75
*Kalamazoo K.	4000	Wis UAU	4¼x6	28.9	L	C	G	GO	PT	F	Strm	V	Pier	Full	D	Bos	Dy	Own	A	4	Spic	Per	B	Own	Flot	9.2	43.49	Ros	36x7	36x7	.....	.....	7400	150	65
Kelly-Springfield K-40.	4200	Own	4½x6½	32.4	T	C	C	Lng	Fin	F	Zen	G	Pier	Own	C	Eis	W	Covt	A	4	Acm	Shel	W	Shel	½ Fl	10.25	49.8	Ros	36x5	36x5†	Smi	.....	7500	160	80
Kelly-Springfield K-41.	4200	Own	4½x6½	32.4	T	C	C	Lng	Fin	F	Zen	G	Pier	B.B.	D	Eis	W	Covt	A	3	Own	Per	C	Own	D	10.49	31.69	Gem	36x5	40x5†	StM	.....	7730	Op	93
Kelly-Springfield K-42.	4200	Own	4½x6½	32.4	T	C	C	Lng	Fin	F	Zen	G	Pier	B.B.	D	Eis	W	Covt	A	4	Pet	Per	I	Cl	D	10	50.7	Gem	36x5	40x5†	Cla	.....	7900	Op	90
*Kleiber C.	.....	Cont E4	4½x5½	32.4	L	C	C	Lng	Fin	F	Zen	G	Pier	B.B.	D	Eis	W	Covt	A	4	Pet	Per	W	Eat	½ Fl	10.25	51.97	Gem	36x5	40x5†	Cla	.....	8500	Op	90
*Koehler F.	4150	Her	4½x5½	32.4	L	C	G	RT	PT	FS	Strm	G	.....	.....	WD	Bos	.....	B-Li	A	4	Spic	.....	W	Timk	Flot	8.75	42.35	Ros	36x5	36x10	Smi	.....	7200	163	75
Larrabee-Deyo L.	4000	Cont E4	4½x5½	32.4	L	C	C	Own	PT	F	Zen	G	Pier	B-Li	DD	Spl	.....	B-Li	A	4	Spic	Math	W	Timk	Flot	10.33	.....	Lav	36x5	36x5†	Smi	.....	7000	162	75
Maccar M2	4200	Wis VAU	4½x6	32.4	L	C	C	Own	Fin	F	Strm	G	Mue	B-Li	DD	Eis	.....	B-Li	UJ	4	Spic	Mer	W	Shel	½ Fl	10	41	Ros	36x5	36x5†	Smi	.....	6850	186	....
Mack AC 3½	4950	Own AC	5 x6	40	L	C	C	Own	Fin	S	Sheb	G	Own	Own	DP	Tea	.....	Own	UJ	3	Spic	Mer	C	Own	D	8.49	27.20	Own	36x5	40x5†	Sch	.....	8070	Op	65
Master A.	4190	Buda YTU	4½x6	32.4	L	C	C	Chic	PT	FS	Mas	V	Pier	B-Li	DP	Eis	.....	B-Li	A	4	Spic	Det	W	Timk	Flot	8.75	46.81	Ros	36x5	36x6†	Day	Fir	6975	174	72
Master AL.	4290	Buda YTU	4½x6	32.4	L	C	C	Chic	PT	FS	Mas	V	Pier	B-Li	DP	Eis	.....	B-Li	A	4	Spic	Det	W	Timk	Flot	10.33	55.26	Ros	36x5	40x5†	Smi	.....	8000	158	72
Master E.	4640	Buda YTU	4½x6	32.4	L	C	C	Chic	PT	FS	Mas	V	Pier	B-Li	DP	Eis	.....	B-Li	A	4	Spic	Det	W	Timk	Flot	10.33	55.26	Ros	36x5	40x5†	Smi	.....	8200	194	72
Master EL.	4740	Buda YTU	4½x6	32.4	L	C	C	Chic	PT	FS	Mas	V	Pier	B-Li	DP	Eis	.....	B-Li	A	4	Spic	Det	R	Walk	Flot	10.4	55.64	Ros	36x5	40x5†	Wal	.....	8000	158	72
Menominee G.	.....	Wis VAU	4½x6	32.4	L	C	C	Own	Fin	FS	Strm	G	Mon	Det	DP	Eis	Opt	Cott	A	4	Spic	Det	R	Walk	Flot	10.4	55.64	Ros	36x5	40x5†	Wal	.....	8200	194	72
*Nelson & LeMoon G 3½	.....	Cont L4	4½x5½	32.4	L	C	C	Chic	Fin	S	Strm	G	Phar	B-Li	DD	Bos	W	B-Li	A	4	Spic	Tut	W	Timk	Flot	10.3	56.16	Ros	36x5	36x10†	Stn	Fir	6750	160	80
Noble E70.	3800	Buda YTU	4½x6	32.4	L	C	C	Chic	Fin	F	Strm	G	Pier	Full	DP	Eis	W	W-Gr	A	4	M-E	Tut	W	Shel	½ Fl	8.7	42	Lav	36x5	36x5†	Pru	Gdy	6000	Op	80
Northway B3.	4400	Own	4 x6	25.6	H	C	GO	C	F	Strm	V	Pier	Full	DP	Wag	Bj	Full	A	4	Spic	Per	W	Shel	½ Fl	8.7	42	Lav	36x5	36x10	Bim	Fir	7500	182	85
Ogden F	.....	Cont L4	4½x5½	32.4	L	G	C	Chic	Fin	FS	Strm	G	Pier	B-Li	DD	Spl	.....	B-Li	A	4	M-E	Tut	W	Timk	Flot	10	49.2	Ros	36x5	40x5†	Cla	.....	7700	Op	72
O.K. 3½ T.	4250	Buda YTU	4½x6	32.4	L	G	C	RT	PT	FS	Zen	V	Pier	Full	DD	Eis	.....	Full	A	4	Hart	Cham	W	Wis	½ Fl	10.33	.....	Ros	36x5	40x10	Stn	.....	7300	178	88
Old Reliable C.	4250	Wis UAU	4¼x6	28.9	L	C	C	Chic	PT	FS	Strm	V	Mon	Full	DD	Bos	.....	Full	A	4	Spic	Shel	W	Shel	½ Fl	10	60	Ros	36x5*	36x5†	Bim	.....	6350	164	....
Paige 51-18.	4285	Hin HA 200	4½x5½	32.4	L	C	C	Own	Fin	F	Strm	V	Sim	B-Li	DD	Bos	.....	B-Li	A	4	Spic	Per	W	Timk	Flot	10.3	50.01	Ros	36x5	36x5†	Own	Fir	7000	160	85
Parker J20.	4400	Wis VAU	4½x6	32.4	L	C	C	Own	PT	F	Strm	V	Pier	B-Li	DD	Eis	W	W-Gr	A	4	Bld	Tut	W	Own	Flot	8.75	43.6	Ros	38x7*	36x10*	Smi	.....	6550	160	76
Pierce Arrow W2	4350	Own	4½x6¾	32.4	T	C	C	.....	Fin	F	Strm	F	Own	.....	DD	Del	Opt	.....	A	4	.....	.....	W	.....	.....	8	49	.....	36x5	36x5†	Day	.....	8350	162	85
Pittsburger C.	3800	Own	4½x5¼	27.2	L	C	GO	Fin	F	Strm	V	.....	B-Li	DP	Bos	....	B-Li	U	4	Spic	IC	W	Own	.....	9.5	50.82	Ros	36x5	36x5†	Smi	.....	6150	162	67.5
Power C	.....	Hink HA	4½x5½	32.4	L	G	GO	PT	F	Zen	V	Hin	Full	DD	Eis	W	Full	A	4	Arv	Row	W	Wis	½ Fl	10	48	Ros	36x5	40x10	StM	.....	7400	160	75
Rainier R-15.	4400	Cont L4	4½x5½	32.4	L	G	EM	PT	FS	Zen	V	Pier	B-Li	DP	Eis	....	B-Li	A	4	Spic	Per	W	Tim	Flot	....	....	Ros	36x5	36x5†	....	Fir	.....	170	70
Republic 20.	3095	Cont E4	4½x5½	32.4	L	G	Own	Fin	FS	Strm	G	Phar	Full	DD	Bos	....	Full	A	4	Spic	Math	I	Torb	D	10.25	49.25	Jac	36x5	36x10	Smi	Fir	6360	166	....
Sandow M.	4295	Cont E4	4½x5½	32.4	L	G	.....	Fin	FS	Strm	G	Mon	.....	DD	Bos	....	B-Li	A	4	Spic	GC	W	Timk	Flot	10	42	Ros	36x5	36x5†	Pru	.....	6500	175	70
Sanford W35.	4200	Cont E4	4½x5½	32.4	L	G	McC	Fin	F	Strm	G	Pier	B.B.	DP	Eis	....	B-Li	A	4	Spic	Per	W	Shel	½ Fl	8.7	34.8	Ros	36x5	36x5†	Hoo	Fir	6750	174	75
Selden 3½A.	4175	Cont E7	4½x5½	32.4	L	C	Lng	Fin	FS	Strm	G	Pier	B-Li	D	Eis	....	B-Li	A	4	Spic	Per	W	Timk	Flot	8.75	46.81	Gem	36x5	36x10	Stn	.....	7200	162	54.5
Service 71.	.....	Buda HU	4¼x5½	28.9	L	C	McC	Fin	F	Strm	V	.....	B.B.	DP	Eis	....	B-Li	A	4	Spic	Shel	W	Timk	Flot	8.75	42.35	Ros	36x5	36x5†	Stn	.....	6930	171	70

Service 76	.....	Buda YU	4½x6	32.4	L	C	McC	Fin	F	Strm	V	.....	B.B.	DP	Eis	.....	B-Li	A	4	Spic	Shel	W	Timk	Flot	7.8	37.75	Ros	36x5	36x5†	Stn	.....	7280	171	70				
*Signal M	3675	Cont E4	4½x5½	32.4	L	C	McC	Fin	FS	Strm	G	Pier	B-Li	DD	Eis	.....	B-Li	A	4	Spic	Det	W	Timk	Flot	12	58.08	Ros	36x5	40x10	StM	.....	7070	168	78				
*Signal ML	3775	Cont E-4	4½x5½	32.4	L	C	McC	Fin	FS	Strm	G	Pier	B-Li	DD	Eis	.....	B-Li	A	4	Spic	Det	W	Timk	Flot	12	58.08	Ros	36x5	40x10	St M	.....	7070	192	....				
*Standard 66	3150	Cont E7	4½x5½	32.4	L	C	Lng	Fin	F	Strm	V	Mon	B-Li	DD	Eis	.....	B-Li	A	4	Spic	Per	W	Timk	Flot	10.3	59.8	Gem	36x5	36x10	.....	.....	6480	160	70				
*Sterling 3½	4325	Ster DU	4½x6¼	32.4	L	G	Own	PT	F	Zen	V	Wau	H-S	WD	Eis	.....	Own	A	3	Spic	Math	W	Timk	Flot	8.75	39.5	Ros	36x5	40x5†	Pru	Fir	8350	162	92				
Stewart 10	3850	Cont E7	4½x5½	32.4	L	G	Bus	PT	FS	Zen	G	Pier	Full	DP	Eis	.....	Full	U	4	Hart	Det	I	Cl	D	10	48	Ros	36x5†	36x5†	Cla	Fir	6080	165	80				
*Stewart 10X	3090	Buda YTU	4½x6	32	L	G	Bus	T	FF	Zen	G	Pier	Full	DP	Eis	.....	Full	U	4	Hart	Det	I	Cl	D	10	48.01	Ross	36x5†	36x5†	Cla	Fir	.....	165	80				
Super Truck 70	4300	Wis	4¼x6	28.9	L	C	Chic	Fin	F	Zen	G	Sim	Full	DD	Bos	.....	Full	A	4	Spic	Shel	W	Shel	½Fl	10.25	49.2	Ros	36x5	40x5†	Smi	.....	7300	164	60				
*Tiffin PW	3600	Cont E4	4½x5½	32.4	L	C	Own	Fin	FS	Sheb	G	Pier	B.B.	DP	Bos	W	Full	A	4	Pet	Kal	W	Shel	.....	8.7	41.7	Ros	36x5	40x5†	Smi	.....	6850	160	80				
*Titan 3½	4100	Buda YTU	4¼x5½	28.9	L	C	B&W	ZZT	F	Strm	G	Sim	B.B.	DP	Eis	.....	Cott	A	4	UP	Math	I	Cl	D	9	48	Lav	36x5	36x10	Day	.....	7300	156	70				
Tower G3½	4100	Cont E4	4½x5½	32.4	L	C	Own	PT	S	Zen	G	Pier	Full	DP	Eis	.....	Full	U	4	Spic	Det	W	Timk	Flot	10.33	50	Ros	36x5	36x5†	Pru	Gdy	7010	165	70				
Transport 70	3885	Buda YTU	4½x6	32.5	L	G	Mod	C	F	Strm	G	Dup	B.B.	D	Eis	.....	Cott	U	4	Hart	Det	I	Cl	D	10.1	52	Jac	36x5	36x10	.....	Fir	7150	170	80				
*United C 3½	3975	Buda HTU	4¼x5½	28.9	L	C	Mod	H	F	Strm	G	Sim	Full	DD	Eis	Opt	Full	A	4	Bld	Bea	I	Cl	D	10	48.1	Lav	36x5	36x5†	Cla	.....	6700	157	70				
*Ursus W 60	3950	Buda YTU	4½x6	32.4	L	C	.....	PT	..	Strm	..	Pier	B-Li	DP	Spl	.....	B-Li	..	4	Ther	.....	W	Timk	Flot	.....	.....	Ros	Opt	Opt	Roy	.....	.....	Op	....				
*Walter T	4540	Own DU	4½x6½	32.4	L	C	Bus	PT	F	Strm	G	Wau	B-Li	D	Eis	W	War	A	4	Own	.....	.....	Own	Flot	8	40	Ros	36x5	40x5†	.....	.....	7400	168	75				
*Ward LaFrance 4A	3990	.....	4½x6¼	32.4	L	C	Own	Fin	F	Strm	G	.....	B-Li	DP	Bos	.....	B-Li	A	4	M&E	Mer	W	Timk	Flot	7.8	41.73	Ros	36x5	36x5†	Smi	.....	7750	162	85				
*Watson N	4250	Cont E4	4½x5½	32.4	L	P	R-T	PT	FS	Strm	G	Pier	B-Li	DP	Sim	.....	B-Li	A	4	Spic	Shel	W	Wis	½Fl	9	43.56	Gem	36x5	36x10	C&M	.....	6600	168	75				
White 40	4200	Own	3¾x5¾	22.5	L	C	.....	Fin	F	Own	V	Own	Own	D	.....	.....	Own	U	4	Own	.....	R	Own	Flot	.....	.....	Own	36x5	40x5†	.....	.....	7400	174	....				
*Wichita O	4000	Wau DU	4½x6¼	32.4	H	G	.....	C	F	Strm	G	Wau	Own	C	Wag	.....	B-Li	A	4	Own	Det	W	Shel	½Fl	11.75	61.10	Ros	36x5	36x5†	Smi	.....	6500	165	80				
Wilcox E	.....	Buda	4½x6	32.4	L	G	.....	PT	S	Strm	G	Dup	Own	C	Bos	.....	Own	A	4	Own	Shel	R	Walk	½Fl	10	45.1	Own	36x5	36x5†	.....	.....	6600	147	75				
Wilson G	3685	Own	4¼x5½	28.9	L	G	Lng	PT	FS	Mar	V	Pier	B.B.	D	Eis	.....	Own	A	4	K-B	Per	W	Timk	Flot	8.7	42.3	Ros	36x5	36x5†	Smi	.....	6800	160	80				
Winther 70	4200	Wis TAU	4 x6	25.6	L	G	Brm	PT	F	Mas	V	.....	B.B.	DP	Eis	W	B-Li	A	4	Bld	Math	I	Cl	D	9	36	Ros	36x5	36x5†	Cla	Fir	6400	150	85				
Wisconsin E (Sauk City)	4000	Wau EU	5 x6¼	40	L	C	Chic	PT	F	.....	V	Wau	B-Li	DD	Eis	Opt	B-Li	A	4	Spic	Det	W	Timk	Flot	10.	.....	Lav	36x6	36x12	Bim	Gdy	6800	166	80				
*Wolverine L 3½	.....	Cont L	4½x5½	32.4	L	G	Lng	PT	F	Strm	G	Phar	Full	D	Eis	Bos	Full	U	4	Up	Am	I	Cl	D	10	48	Gem	36x5	36x10	Cla	Gdy	7300	186	72				
Young 7	3750	Cont L4	4½x5½	32.4	L	C	Whee	Fin	F	Strm	G	Mon	B-Li	D	Eis	.....	B-Li	A	4	Spic	Math	W	Timk	Flot	.....	.....	Ros	36x5	36x10	StM	.....	6800	176	72				
4 Ton																																					
American	4275	Wis	4½x6	32.4	L	G	GO	Fin	F	Strm	G	Own	Det	DP	Apo	.....	Cott	A	4	Acm	SP	W	Wis	½Fl	10	.....	Lav	36x5	36x5†	Smi	.....	7000	158	....				
Bessemer K2	.....	Cont E7	4½x5½	32.4	L	C	.....	C	FS	Strm	G	Pier	B.B.	DP	Bos	.....	B-Li	A	4	Spic	Per	I	Torb	D	10	49.5	Ros	36x5	36x10†	Sch	Fir	6740	175	75				
Corbitt A–22	3800	Cont E4	4½x5½	32.4	L	G	McC	Fin	FS	Strm	V	Pier	B-Li	DD	Eis	.....	B-Li	U	4	Hart	Shel	W	Shel	½Fl	11.75	47	Ros	36x5	36x10	Smi	.....	7370	178	75				
*Denby 27	4200	Cont E7	4½x5½	32.4	L	G	Lng	PT	FS	Strm	G	Sim	Full	DD	Eis	.....	W-Gr	A	4	UP	Det	I	Cl	D	10	49.9	Ros	36x5	36x5†	Smi	Fir	7020	170	78				
Double-Drive B	4000	Buda ETU	4¼x5½	28.9	L	G	.....	PT	F	Zen	V	Pier	B.B.	DD	Spl	Opt	Own	A	4	Own	Own	W	Own	½Fl	9.75	48.75	Lav	36x6	36x6	Stn	.....	.....	130	55				
*Fageol 3½–4	5000	Wau DU	4½x6¼	32.4	L	C	Mod	C	F	Zen	V	Wau	Det	DD	Spl	.....	Own	A	5	Spic	Math	W	Timk	Flot	7.4	79	Ros	36x5	40x5	Stn	.....	7300	172	80				
*Gramm-Bernstein 40	3995	Hink HA200	4½x5½	32.4	L	C	Own	Fin	F	Strm	V	Hink	Own	DD	Eis	NE	Own	A	4	Own	Per	W	Shel	½Fl	8.7	50.6	Ros	36x5	36x5†	Smi	.....	8350	156	91.7				
Highway-Knight A	.....	R & V-W	4 x6	25.6	S	T	Own	Fin	F	Zen	V	Mon	Own	D	Eis	Wg	Own	A	4	Ther	Shel	W	Shel	½Fl	8.75	42.35	Ros	36x5	36x6†	Sch	.....	8050	159	....				
Kimball E	5000	Wis RAU	4¾x6	36.1	L	C	Eag	PT	F	Strm	V	Sim	B-Li	DP	Spl	W	B-Li	A	4	Spic	US	W	Shel	½Fl	8.75	42.3	Woh	36x5	40x12	Smi	Fir	8250	Op	66				
Kissel Heavy Duty	3675	Own 14000	4¼x5½	28.9	L	C	McC	PT	S	Strm	V	Pier	W-Gr	DP	Eis	.....	W-Gr	A	4	Spic	Shel	W	Shel	½Fl	11.7	58.6	Ros	36x5	36x5†	Smi	.....	7200	168	75				
Moreland 21G	4600	Cont B2	4¾x6	36.1	L	C	Own	C	F	Mas	P	Con	Own	DD	Spl	.....	Own	A	5	Ther	UB	W	Timk	Flot	8.75	52.68	Ros	36x5	40x5†	Smi	.....	8000	168	....				
Riker BB	4700	Own	4¼x6	28.9	T	C	.....	Fin	FS	BB	G	Own	Own	C	Ber	W	Own	A	4	Own	.....	W	Own	½Fl	10	42.5	Ros	36x5	36x6†	.....	.....	6381	150	77				
Rowe HW 4	4500	Wis UAU	4¼x6	28.9	L	C	Fed	H	F	Zen	G	Sim	B-Li	DP	Bos	.....	B-Li	U	4	Spic	Shel	W	Shel	½Fl	8.7	35	Ros	36x5	36x6†	Hoo	.....	6370	156	77				
*Schacht	4200	Buda YTU	4½x6	32.4	L	G	Own	PT	F	Sheb	G	Dup	B.B.	D	Bos	.....	Own	A	4	M&E	Nat	W	Own	Flot	10.5	50	Own	36x5	40x10†	StM	.....	7800	168	70				
Traylor E	4450	Buda YTU	4½x6	32.6	L	P	GO	Fin	F	Zen	G	Sim	B-Li	DD	Bos	.....	B-Li	A	4	Spic	Mer	W	Shel	½Fl	8.7	.....	Ros	36x5	40x5†	Smi	.....	8500	170	75				
Union H	3975	Wis VAU	4½x6	32.4	L	G	GO	Fin	F	Sheb	G	Dup	Full	DD	Eis	LN	Full	U	4	UP	Math	I	Torb	D	10.25	49.2	Ros	36x6	36x10	Smi	.....	7700	174	75				
Union HW	4650	Wis VAU	4½x6	32.4	L	G	GO	Fin	F	Sheb	G	Dup	Full	DD	Eis	LN	Full	A	4	UP	Math	R	Walk	.....	10.5	63.0	Ros	36x6	40x12	Smi	.....	7750	174	75				
U. S., S	.....	Own	4½x5½	32.4	L	C	Lng	Fin	F	Strm	V	Own	B-Li	DD	Eis	Opt	B-Li	A	4	Opt	Shel	W	Shel	½Fl	10.25	49.6	Lav	36x5	36x5†	Sch	.....	7600	168	85				
5 Ton																																					
Acason M	.....	Wau EU	5 x6¼	40	L	G	Can	Fin	FS	Sheb	V	Wau	Det	....	Eis	....	Cott	A	4	Bld	Det	W	Timk	Flot	10.25	53.3	Ros	36x6	40x6†	Smi	Opt	8350	187	....				
Acme E	.....	Cont B2	4¾x6	36.1	L	C	GO	Fin	F	Rayf	V	Con	B.B.	DP	Eis	DL	Cott	A	4	Bld	Det	W	Timk	Flot	11.66	60.66	Ros	36x6	40x12	Smi	.....	8976	180	50				
Atterbury 8E	4975	Cont B2	4¾x6	36.1	L	C	Own	Fin	F	Zen	V	Con	B-Li	DD	Ber	.....	B-Li	A	4	Spic	SP	W	Timk	Flot	11.6	62.38	Gem	36x5	40x6†	Stn	.....	9496	167	81¾				
Atterbury 8E-LWB	5125	Cont B-2	4¾x6	36.1	L	C	Own	Fin	F	Zen	V	Con	B-Li	DD	Ber	.....	B-Li	A	4	Spi	SP	W	Timk	Flot	11.6	62.38	Gem	36x5	40x6†	Stn	.....	9816	192	....				
Autocar Y	3950	Own Y	4¼x5½	28.9	L	C	Own	Fin	S	Strm	G	.....	Own	DP	.....	.....	Own	A	4	.....	.....	R	Own	Flot	8.7	52.2	Ros	34x6	36x12	Hoo	.....	7200	120	65				
Autocar B	4100	Own B	4¼x5½	28.9	L	C	Own	Fin	S	Strm	G	.....	Own	DP	.....	.....	Own	A	4	.....	.....	R	Own	Flot	8.7	52.2	Ros	34x6	36x12	Hoo	.....	7400	156	65				
Available H5	5375	Her T2	4¾x6	36.1	L	C	Chic	Fin	FS	Strm	V	Pier	B-Li	DD	Bos	.....	B-Li	A	4	M-E	Tut	W	Timk	Flot	11.3	60.45	Ros	36x6	40x12	Smi	.....	9500	190	75				
Brookway T	.....	Cont B2	4¾x6	36.1	L	C	Bus	Fin	F	Strm	V	Con	B-Li	DD	Eis	.....	B-Li	A	4	Spic	Mer	W	Timk	Flot	10.25	54.8	Gem	36x6	40x6†	Smi	.....	8800	174	70				
Chicago D5	.....	Her MU3	4½x5½	32.4	L	C	.....	PT	F	Strm	G	Sim	B-Li	D	Bos	.....	B-Li	A	4	Pet	Math	W	Timk	Flot	13.66	63.1	Gem	36x6	40x12	Opt	Sta	6900	168	....				
Clydesdale 120 B	4500	Cont	4¾x6	36.1	L	C	Strm	PT	F	Zen	V	Own	B-Li	DD	Bos	.....	B-Li	A	4	Spic	Stan	W	Timk	Flot	11.66	62.4	Ros	36x6	40x12	Smi	.....	9200	176	76				
Corbitt AA–22	4500	Cont B2	4¾x6	36.1	L	C	McC	Fin	F	Strm	V	Con	B-Li	DD	Eis	.....	B-Li	A	4	Hart	Shel	W	Shel	½Fl	10.25	49.6	Ros	36x6	40x6†	Smi	.....	9685	178	70				
Day-Elder E	4250	Buda YU	4½x6	32.4	L	C	Bus	Fin	F	Zen	G	Mon	B-Li	DD	Eis	.....	B-Li	A	4	Hart	Shel	W	Shel	½Fl	10.25	49.61	Gem	36x5	40x6†	Smi	Fir	8250	170	70				
Denby 210	4500	Cont E7	4½x5½	32.4	L	C	Lng	PT	FS	Strm	G	Sim	Full	DD	Eis	.....	W-Gr	A	4	Pet	Det	I	Cl	D	12.5	62.7	Ros	36x6	40x6†	Cla	Fir	8590	170	80				
Diamond T–EL	4325	Hin	4½x5½	32.4	L	C	GO	Fin	F	Strm	V	Own	Covt	DD	Bos	.....	Covt	A	4	Spic	Math	W	Timk	Flot	11.66	59.11	Gem	36x6	40x6†	.....	.....	8625	180	....				
Diamond T8	4500	.....	4¾x6	36.1	L	C	GO	Fin	F	Strm	V	Own	B-Li	DD	Bos	.....	B-Li	A	4	Spic	Math	W	Timk	Flot	11.66	56.43	Gem	36x6	40x6†	.....	.....	8750	180	....				
*Fageol 5–6	5700	Wau DU	4½x6¼	32.4	L	C	Mod	C	F	Zen	V	Wau	Det	DD	Spl	.....	Own	A	5	Spic	Math	W	Timk	Flot	8.4	89	Ros	36x6	40x6†	Stn	.....	8300	172	80				
*Federal X2	4500	Con B5	4¾x6	36.1	L	C	Own	Fin	F	Zen	V	Phar	B.B.	DP	Eis	.....	Own	A	4	Spic	Math	W	Timk	Flot	10.25	60	Gem	36x6	40x6†	.....	Fir	8800	163	....				
Garford 68 D	.....	Buda BTU	5 x6½	40	L	C	Own	Fin	F	Strm	G	Sim	.....	DD	Spl	.....	Own	A	4	Spic	Per	W	Timk	Flot	8.8	.....	Ros	36x6	40x6†	Smi	.....	9350	162	....				
Giant 18	5000	Cont	4½x5½	32.4	L	P	Own	.....	B	Sheb	G	Mon	B-Li	DD	Eis	.....	B-Li	A	4	Spic	Math	W	Timk	Flot	10.25	49.61	Ros	36x6	40x10	Smi	.....	7500	196	85				
G. M. C. K-101	4650	Own	4½x6	32.4	L	B	Own	Fin	F	Mar	G	Own	Own	DD	Eis	Opt	Own	A	7	Own	Det	W	Timk	Flot	10	86	Own	36x5	40x6†	Own	.....	8535	Op	Opt				
*Gramm-Bernstein 50–60	4895	Lib B	4¾x6	36.1	L	C	Own	Fin	F	Strm	V	Con	Own	DD	Eis	NE	Own	A	4	Own	Per	W	Shel	½Fl	9.5	55	Ros	36x6	40x6†	Smi	.....	9860	168	92.2				
Hall 5 Worm	.....	Cont E4	4½x5½	32.4	L	T	Own	PT	FS	Zen	G	Dup	B-Li	DP	Bos	.....	B-Li	A	..	Opt	Per	W	Timk	Flot	12	.....	Gem	36x5	40x6†	Smi	.....	8400	144	....				
Hendrickson K	4800	Wau EU	5 x6¼	40	L	C	Chic	Pt	F	Strm	G	Wau	Full	D	Spl	.....	Full	...	4	Ther	Tut	W	Timk	Flot	12	57	Ros	36x6	40x6†	Stn	.....	.....	Op	....				
Highway-Knight B	.....	R&V-W	4 x6	25.6	S	T	Own	Fin	F	Zen	V	Mon	Own	D	Eis	Wg	Own	A	4	Ther	Shel	W	Shel	½Fl	10.25	49.61	Ros	36x5	40x6†	Sch	.....	8650	161	....				
Hurlburt	.....	Buda YTU	4½x6	32.4	L	C	Own	.....	FS	Flch	G	Dup	B-Li	D	Eis	.....	B-Li	A	4	Spic	Per	W	Own	Flot	11	49.9	Ros	36x5	40x6†	Wau	.....	7973	156	....				
Indiana 51	.....	Wau EU	5 x6¼	40	L	C	McC	Fin	F	Strm	G	Wau	B.B.	DP	Eis	.....	B-Li	A	4	Spic	Shel	W	Shel	½Fl	10.25	54.84	Woh	36x5	40x6†	Smi	.....	9000	170	76.8				
International 101	3600	Own	4¼x5	28.9	H	C	Own	Fin	FS	Ens	G	Own	Own	DP	Spl	Own	Own	A	4	Own	.....	I	Own	D	11	53.25	Own	36x5	40x10	Own	.....	6715	160	50				
Italia	5700	Buda YTU	4½x6	32.4	L	C	Mod	ZZT	F	Strm	V	Pier	Full	D	Eis	.....	Full	A	4	Spic	Shel	W	Shel	½Fl	.....	.....	Ros	36x5	36x12	Smi	.....	8000	178	90				
Kalamazoo K5	4500	Wis UAU	4½x6	32.4	L	P	GO	PT	F	Strm	V	Pier	Full	D	Bos	Dy	Full	A	4	Spic	Shel	W	Shel	½Fl	13	78	Ros	36x6	36x12	Smi	.....	8550	160	80				
Kelly-Springfield K50	4900	Own	4½x6½	32.4	T	C	Lng	Fin	F	Zen	G	Pier	B.B.	C	Eis	W	Covt	A	4	Own	Per	C	Own	D	12.24	44.74	Gem	36x6	40x6†	Smi	.....	8400	Op	93				
Kimball F	5500	Wis RBU	5 x6	40	L	C	Eag	PT	F	Zen	V	Sim	B-Li	DP	Spl	W	B-Li	A	4	Spic	US	W	Shel	½Fl	8.75	52.5	Woh	36x6	40x7†	Smi	Fir	8800	Op	66				
Kissel Goliath	4085	Own 60000	4¼x5½	28.9	L	C	McC	PT	S	Strm	V	Pier	W-Gr	DP	Eis	.....	W-Gr	A	4	Spic	Shel	W	Shel	½Fl	13	65	Ros	36x6	36x6†	Smi	.....	8000	180	75				
Kleiber D	.....	Buda BTU	5 x6½	40	L	C	RT	PT	..	Strm	G	Sim	.....	DD	Bos	.....	B-Li	A	4	Spic	.....	W	Timk	Flot	11.66	56.48	Ros	36x6	40x6	Smi	.....	9200	180	75				
Larrabee-Devo W	4800	Cont B2	4¾x6	36.1	L	C	Bus	Fin	F	Sheb	G	Sim	B-Li	DD	Bos	.....	B-Li	A	4	Opt	Mer	W	Shel	½Fl	10	51	Ros	36x6	40x6†	Smi	.....	9900	186	....				
Maccar G	4950	Cont B2	4¾x6	36.1	L	C	Own	Fin	F	Zen	G	Con	B-Li	DD	Eis	.....	B-Li	A	4	Spic	Mer	W	Timk	Flot	10.2	54.57	Ros	36x5	40x6†	Smi	Fir	8750	186	74				
Mack AC5	5500	Own AC	5 x6	40	L	C	Own	Fin	S	Sheb	G	Own	Own	DP	Tea	.....	Own	UJ	3	Spic	Mer	C	Own	D	9	28.89	Own	36x6	40x6†	Sch	.....	8650	Op	68				
Master B	5290	Buda ATU	4¾x6½	36.1	L	C	Chic	PT	FS	Mas	V	Pier	B-Li	DP	Eis	.....	B-Li	A	4	Spic	Det	W	Timk	Flot	11.6	62.06	Ros	36x6	40x6†	Smi	.....	9200	170	72				
Master BL	5390	Buda ATU	4¾x6½	36.1	L	C	Chic	PT	FS	Mas	V	Pier	B-Li	DP	Eis	.....	B-Li	A	4	Spic	Det	W	Timk	Flot	11.6	62.06	Ros	36x6	40x6†	Smi	.....	9800	194	72				
Master F	5440	Buda ATU	4¾x6½	36.1	L	C	Chic	PT	FS	Mas	V	Pier	B-Li	DP	Eis	.....	B-Li	A	4	Spic	Det	R	Walk	Flot	11.5	63.52	Ros	36x6	40x6†	Wal	.....	9200	170	72				

Trade Name and Model	Chassis Price	ENGINE DETAILS: Make and Model Number 4 Cylinder unless otherwise noted	Bore and Stroke	N. A. C. C. Horsepower	Valve Arrange't	How Cooled	Radiator (Make)	Radiator (Type)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Clutch (Make)	Clutch (Type)	Ignition System	Engine Starter	GEARSET: Make	Location	Speeds	Universal (Make)	Springs (Make)	REAR AXLE: Final Drive	Make	Type	Total Gear Reduction in High	Total Gear Reduction in Low	Steering Gear (Make)	TIRES, WHEELS, RIMS: *Pneumatic †Dual Front	Rear	Wheels (Make)	Rim Equipment	Chassis Weight	Wheelbase	Pr. Cent of Weight on Rear Wheels
5 Ton—Con'd		1			2	3	4	5	6	7	8	9	10	11	12	13	14	15		16	17	18	19	20			21			22	23			
Master FL	5540	Buda ATU	4¾x6½	36.1	L	C	Chic	PT	FS	Mas	V	Pier	B-Li	DP	Eis	.....	B-Li	A	4	Spic	Det	R	Walk	Flot	11.5	63.52	Ros	36x6	40x6†	Wal	.....	9800	194	72
Menominee J	.....	Wis RAU	4¾x6	36.1	L	C	Own	Fin	FS	Strm	G	Mon	Det	DP	Eis	Opt	Cott	A	4	Spic	Tut	W	Timk	Flot	11.6	61.43	Ros	36x6	40x12†	Stn	Fir	8250	160	80
Moreland 21J	5000	Cont B2	4¾x6	36.1	L	C	Own	C	F	Mas	P	Con	Own	DD	Spl	.....	Own	A	5	Ther	US	W	Timk	Flot	10.4	62.19	Ros	36x6	40x6†	Smi	.....	9000	168	...
Nelson & LeMoon G5	.....	Cont B2	4¾x6	36.1	L	C	Chic	Fin	F	Strm	G	Con	B-Li	DD	Bos	W	B-Li	A	4	Own	Tut	W	Timk	Flot	11.66	.....	Lav	36x6	40x6†	Pru	Gdy	8000	Op	80
Ogden G	.....	Cont B 2	4¾x6	36.1	L	P	Chic	Fin	FS	Strm	G	Pier	B-Li	DD	Spl	.....	B-Li	A	4	M-E	Tut	W	Walk	.....	10.33	.....	Ros	36x6	40x12	Wal	.....	8600	175	88
Old Reliable D	5000	Wis RAU	4¾x6	36.1	L	C	Chic	PT	FS	Strm	V	Mon	Own	WD	Bos	.....	B-Li	A	4	Spic	Shel	W	Shel	½ Fl	10.25	41.5	Ros	36x5	40x6	StM	.....	8400	180	80
Packard EF	4500	Own	5 x5½	40	L	C	.....	Fin	F	Own	P	Own	Own	DP	Spl	Bj	Own	A	4	Spic	.....	W	Own	Flot	10.66	49	Ros	36x6	40x6	.....	.....	9050	156	58
Parker M20	5500	Wis RAU	4¾x6	36.1	L	C	Own	PT	F	Strm	V	Pier	B-Li	DD	Fis	W	W-Gr	A	4	Bld	Tut	W	Own	Flot	10.25	51.1	Ros	36x6	40x6†	Smi	.....	8400	160	78
Pierce Arrow R10	4850	Own	4½x6¾	32.4	T	C	.....	Fin	F	Strm	F	Own	.....	DD	Del	Opt	.....	A	4	.....	.....	W	.....	.....	10	61.2	.....	36x5	40x6†	Day	.....	9300	168	85
Rainier R-17	5100	Cont B-2	4¾x6	36.1	L	G	EM	Fin	F	Zen	V	Pier	B-Li	DP	...	.....	B-Li	A	4	Spi	.....	W	Timk	Flot	.....	.....	Ros	36x6	36x36†	Smi	.....	8000	170	....
Rowe FW5	5550	Wis VAU	4½x6	32.4	L	C	Fed	H	F	Zen	G	Sim	B-Li	DP	Bos	.....	B-Li	A	4	Spic	Shel	W	Shel	½ Fl	8.7	40.7	Ros	36x6	40x6†	Hoo	.....	8300	169	75
Sandow L	4975	Cont E4	4½x5½	32.4	L	C	.....	Fin	FS	Strm	G	Mon	.....	D	Bos	.....	B-Li	A	4	Spic	GC	W	Timk	Flot	12	46.6	Ros	36x6	40x6†	Stn	.....	7800	175	70
Sanford W50	5100	Cont E4	4½x5½	32.4	L	G	MoC	Fin	F	Strm	G	Pier	B.B.	DP	Eis	.....	B-Li	A	4	Spic	Per	W	Shel	½ Fl	10.75	52.03	Ros	36x5	40x6†	Hoo	Fir	9070	174	75
*Schacht	4400	Buda YTU	4½x6	32.4	L	G	Own	PT	F	Sheb	G	Dup	B.B.	D	Bos	.....	Own	A	4	M-E	Nat	W	Own	Flot	14	66.5	Own	36x5	40x6†	StM	.....	8200	168	70
Schwartz DW8	4900	Buda YTU	4½x6	32.4	L	C	Fed	H	F	Strm	G	Sim	Full	DP	Bos	.....	Full	A	4	ME	Row	W	Shel	½ Fl	12	72	Ros	36x6	40x12	Smi	Fir	9000	156	....
Schwartz DW	4900	Buda YTU	4½x6	32.4	L	C	Fed	H	F	Strm	G	Sim	Full	DP	Bos	.....	Full	A	4	ME	Row	W	Shel	½ Fl	12	72	Ros	36x6	40x12	Smi	Fir	9000	170	....
Schwartz DWL	4900	Buda YTU	4½x6	32.4	L	C	Fed	H	F	Strm	G	Sim	Full	DP	Bos	.....	Full	A	4	ME	Row	W	Shel	½ Fl	12	72	Ros	36x6	40x12	Smi	Fir	9000	186	....
Selden 5A	5600	Cont B2	4¾x6	36.1	L	C	Lng	Fin	F	Strm	G	Con	Det	D	Eis	.....	B-Li	A	4	Spic	SP	W	Timk	Flot	10.25	55	Gem	36x6	40x12	Stn	.....	9650	164	56½
Service 101	.....	Buda YU	4½x6	32.4	L	C	MoC	Fin	F	Strm	V	.....	B.B.	DP	Eis	.....	B-Li	A	4	Spic	Shel	W	Timk	Flot	10.25	49.6	Ros	36x6	40x6†	Stn	.....	8760	171	75
*Signal R	4400	Cont B2	4¾x6	36.1	L	C	MoC	Fin	FS	Strm	G	Pier	B-Li	DD	Eis	.....	B-Li	A	4	Spic	Det	W	Timk	Flot	11.6	56.43	Ros	36x6	40x12	Smi	Gdy	9510	180	80
*Standard 5K	4400	Cont B2	4¾x6	36.1	L	C	Lng	PT	F	Strm	V	Con	B-Li	DD	Eis	.....	B-Li	A	4	Spic	Per	W	Timk	Flot	11.66	66	Gem	36x6	40x12	Day	.....	8700	164	73
*Sterling 5-Worm	4950	Ster EU	5 x6¼	40	L	C	Own	PT	F	Zen	V	Wau	H-S	WD	Eis	.....	Own	A	3	Spic	Math	W	Timk	Flot	8.8	39.69	Ros	36x6	40x6†	Pru	.....	9750	168	94
*Sterling 5-Chain	5500	Ster EU	5 x6¼	40	L	C	Own	PT	F	Zen	V	Wau	H-S	WD	Eis	.....	Own	A	6	UM	Math	C	Own	D	7.04	39.59	Ros	36x6	40x6†	Smi	.....	10250	174	94
Super Truck 100	5300	Wis	4¾x6	36.1	L	C	Chic	Fin	F	Zen	G	Sim	Full	DD	Spl	.....	Full	A	4	Spic	Shel	W	Shel	½ Fl	10.25	49.2	Ros	36x5	40x6†	Smi	.....	8500	164	62
*Tiffin TW	4300	Cont B2	4¾x6	36.1	L	C	Own	Fin	F	Sheb	G	Con	B.B.	DP	Bos	W	Cott	A	4	Pet	Kal	W	Shel	½ Fl	10.25	53.3	Ros	36x6	40x6†	Smi	.....	8400	168	80
*Titan 5	4750	Buda YTU	4½x6	32.4	L	C	B&W	ZZT	F	Strm	G	Sim	B.B	D	Eis	.....	Cott	A	4	Pet	Shel	I	Cl	D	11	59	Lav	36x5	40x6†	Cla	.....	9100	156	70
Titan 6	5150	Buda YTU	4½x6	32.4	L	C	BW	ZZT	F	Strm	G	Eis	B.B.	DD	Eis	.....	Cott	A	4	Pet	Shel	I	Cla	D	11	59	Lav	36x5	40x6†	Cla	.....	9100	156	70
Traylor F	4700	Buda YTU	4½x6	32.6	L	P	GO	Fin	F	Zen	G	Sim	B-Li	DD	Bos	.....	B-Li	A	4	Spic	Mer	W	Shel	½ Fl	10.2	.....	Ros	36x6	40x6†	Smi	.....	9000	170	75
*United V 5	5000	Buda YTU	4½x6	32.4	L	C	Mod	H	F	Strm	G	Sim	Full	DD	Eis	Opt	Full	A	4	Bld	Bea	I	Cl	D	12.5	75.36	Ros	36x5	40x6†	Cla	.....	9150	160	70
U. S., T	.....	Buda ATU	4¾x6½	36.1	L	C	Lng	Fin	F	Strm	V	Sim	B-Li	DD	Eis	Opt	B-Li	A	4	Opt	Shel	W	Shel	½ Fl	10.25	54.8	Lav	36x6	40x6†	Smi	.....	9700	172	90
Walter S	4850	Own DU	4½x6¼	32.4	L	C	Bus	PT	F	Strm	G	Wau	B-Li	DP	Bos	W	W-Gr	A	4	Own	Stan	R	Own	Flot	10	45	Ros	36x6	40x6†	Day	.....	7900	168	75
*Ward La France 5A	4590	.....	5 x6¼	40..	L	C	Own	Fin	F	Strm	G	.....	B-Li	DP	Bos	.....	B-Li	A	4	M-E	Mer	W	Timk	Flot	8.8	47.08	Ros	36x6	40x6†	Smi	.....	9300	164	85
White 45	4500	Own	4¼x5¾	28.9	L	C	.....	Fin	F	Own	V	Own	Own	D	...	.....	Own	U	4	Own	.....	R	Own	Flot	.....	.....	Own	36x6	40x6†	.....	.....	8200	174	....
*Wilcox F	.....	Buda	4¾x6½	36.1	L	C	Lng	PT	S	Strm	V	Dup	Own	C	Bos	.....	Own	A	4	Spic	Shel	R	Walk	½ Fl	10.25	56.58	Own	36. 5	40x12	Smi	.....	9000	162	80
Wilson H	4520	Own	4¾x6	36.1	L	G	Lng	PT	FS	Mar	V	Pier	B.B.	D	Eis	.....	Own	A	4	K-B	Per	W	Timk	Flot	10.25	49.6	Ros	36x6	36x6†	Smi	.....	7500	160	80
Winther 109	5250	Wis VAU	4½x6	32.4	L	G	Brm	PT	F	Mas	V	Dup	B.B.	DP	Eis	W	B-Li	A	4	Bld	Math	I	Cl	D	12	60.5	Ros	36x5	40x6†	Cla	.....	8300	162	80
5½, 6 and 7 Ton																																		
Available H7	6000	Her T3	5 x6	40	L	C	Chic	Fin	FS	Strm	V	Pier	B-Li	DD	Bos	.....	B-Li	A	4	M-E	Tut	R	Sav	½ Fl	14	74.90	Ros	36x6	40x14	Smi	.....	10300	190	75
Bartlett 70	.....	Wis RBU	5 x6	40	L	C	Chic	PT	F	Strm	V	Sim	HS	.....	Bos	.....	Cott	...	3	Hart	Shel	C	Own	D	12.25	48	Ros	36x7	40x14	Smi	.....	11000	144	83
Doane 6	6000	Wau EU	5 x6¼	40	L	C	Own	PT	S	Mas	G	Wau	B-Li	DD	Bos	.....	B-Li	U	3	Own	Own	C	Own	D	10.5	42	Lav	36x6	40x6†	Wes	.....	8500	178	79
Garford 150 A-7½	.....	Buda BTU	5 x6½	40	L	C	Own	Fin	F	Strm	G	Sim	.....	DD	Spl	.....	Own	UJ	4	Spic	Per	C	Own	D	11.44	.....	Ros	36x6	40x7†	.....	.....	10200	162	....
Hall 7 Chain	.....	Cont E4	4½x5½	32.4	L	T	Own	Fin	FS	Zen	G	Dup	B-Li	DP	Bos	.....	B-Li	U	..	Opt	Det	C	.....	D	12	.....	Gem	36x5	40x6†	Smi	.....	8400	144	....
Kelly-Springfield K60	5100	Own	4½x6½	32.4	L	C	Lng	Fin	F	Zen	G	Pier	B.B.	C	Eis	W	Covt	A	4	Own	Per	C	Own	D	12.39	45.19	Gem	36x6	40x7†	Smi	.....	8900	Op	93
MacDonald A	5750	Buda YTU	4½x6	32.4	L	C	Own	PT	F	Strm	G	Sim	B-Li	DD	Spl	.....	B-Li	U	4	Own	Own	I	Own	D	17.5	77	Own	40x7	Opt	Opt	.....	6000	...	66
Mack AC6½	5750	Own AC	5 x6	40	L	C	Own	Fin	S	Sheb	G	Own	Own	DP	Tea	.....	Own	UJ	3	Spic	Mer	C	Own	D	10.50	33.70	Own	36x6	40x12	Sch	.....	8672	Op	73
Mack AC7½	6000	Own AC	5 x6	40	L	C	Own	Fin	S	Sheb	G	Own	Own	DP	Tea	.....	Own	UJ	3	Spic	Mer	C	Own	D	11.58	37.16	Own	36x7	40x7†	Sch	.....	9050	Op	73
Old Reliable K, L, M	6000	Wau EU	5 x6¼	40	L	C	Chic	PT	FS	Strm	G	Wau	Own	WD	Bos	.....	Own	A	4	Spic	Shel	C	Own	D	10.86	54.9	Ros	36x6	40x7†	StM	.....	10240	136	78
*Schacht 7	5000	Buda YTU	4½x6	32.4	L	G	Own	PT	F	Sheb	G	Dup	B.B.	D	Bos	.....	Own	A	4	M-E	Nat	W	Own	Flot	14	66.5	Own	36x6	40x7†	St M	.....	8500	168	70
*Sterling 7½-Chain	6000	Ster EU	5 x6¼	40	L	C	Own	PT	F	Zen	V	Wau	H-S	WD	Eis	.....	Own	A	6	UM	Math	C	Own	D	7.26	43.6	Ros	36x6	40x7†	Smi	.....	11000	174	94
*Tiffin 6 U-W	4500	Cont B2	4¾x6	36.1	L	C	Own	Fin	F	Sheb	G	Con	B.B.	DP	Bos	W	Cott	A	4	Pet	Kal	W	Shel	½ Fl	10.25	53.3	Ros	36x6	40x12	Smi	.....	9000	168	80
Union J.W	5800	Wis RBU	5 x6	40	L	G	GO	Fin	F	Sheb	G	Dup	Full	DD	Eis	LN	Full	A	4	UP	Math	R	Walk	.....	11.5	69.0	Ros	36x6	40x14	Smi	.....	9250	193	75
*Walter R	5350	Own DU	4½x6¼	32.4	L	C	Bus	PT	F	Strm	G	Wau	B-Li	D	Eis	W	War	A	4	Own	.....	...	Own	Flot	10	50	Ros	36x6	40x7†	Day	.....	8200	168	80
*Wichita S	5000	Wau DU	4½x6¼	32.4	H	G	.....	C	F	Strm	G	Wau	Own	C	Wag	.....	Own	A	4	Own	Det	R	Own	½ Fl	14	66.3	Ros	36x6	40x6†	Smi	.....	10000	165	80
Winther 140	5900	Wis-RBU	5 x6	40	L	G	Brm	PT	F	Mas	V	Dup	B.B.	DP	Eis	W	B-Li	A	4	Bld	Math	I	Cl	D	12	60.5	Ros	36x6	40x7†	Cla	.....	9600	162	80
Gasoline Tractor-Trucks																																		
*Buffalo Six 2½	3400	Her CU3	4 x5½	25.6	L	P	Own	PT	F	Zen	V	Sim	Covt	D	Bos	Bos	Covt	...	10	Spic	Shel	W	Shel	½ Fl	7.75	150	Ros	Opt	Opt	Way	Gdy	6325	155	75
Federal Light Duty	2600	Cont C4	4½x5½	27.2	L	C	Own	Fin	FS	Zen	G	Phar	B.B.	DP	Eis	.....	Own	A	4	Spic	Math	W	Timk	Flot	9.2	40.7	Gem	36x4	36x7	.....	Fir	4700	120	....
Federal Heavy Duty	3350	Cont E4	4½x5½	32.4	L	C	Own	Fin	FS	Zen	G	Phar	B.B.	DP	Eis	.....	Own	A	4	Spic	Math	W	Timk	Flot	12	59.8	Gem	36x5	36x5†	.....	Fir	6800	114	....
*Fulton D	2550	H Sp 7000	3½x5	19.6	L	T	GO	H	FS	Cart	G	.....	Covt	DP	Ber	.....	Covt	...	3	UP	.....	I	Russ	D	10.2	.....	Lav	36x4	36x6	Hoo	.....	3300	110	68
*Koehler MT	3275	Her	4 x5½	25.6	L	G	Own	PT	F	Zen	G	Sim	B-Li	DD	Spl	.....	B-Li	A	4	Spic	Math	W	Timk	Flot	9.25	37	Lav	36x4	36x7	Way	.....	5000	129	75
Lombard 140H.P	.....	Spec 6	5½x6¾	72.7	L	C	Spec	H	F	Strm	P	.....	.....	D	.....	.....	Spec	A	...	.....	.....	W	.....	.....	.....	.....	Spe	.....	.....	.....	.....	18000	...	90
Lombard 50 H.P	.....	Spec 4	5 x6¼	40	L	C	Spec	H	F	Strm	P	.....	.....	D	.....	.....	Spic	A	...	.....	.....	W	.....	.....	.....	.....	Spe	.....	.....	.....	.....	8000	...	85
Mack AB 5-Ton	3400	Own AB	4 x5	25.6	L	C	Own	C	S	Sheb	G	Own	Own	DD	Tea	.....	Own	U	4	Spic	Mer	C	Own	D	10.5	42.27	Own	36x4	36x4†	Sch	.....	4940	120	....
Mack AC 7-Ton	4950	Own AC	5 x6	40	L	C	Own	Fin	S	Sheb	G	Own	Own	DP	Tea	.....	Own	UJ	3	Spic	Mer	C	Own	D	10.7	34.60	Own	36x5	40x5†	Sch	.....	7670	119	....
Mack AC 10-Ton	5500	Own AC	5 x6	40	L	C	Own	Fin	S	Sheb	G	Own	Own	DP	Tea	.....	Own	UJ	3	Spic	Mer	C	Own	D	11.5	37.16	Own	36x6	40x6†	Sch	.....	8250	119	....
Mack AC 13-Ton	5750	Own AC	5 x6	40	L	C	Own	Fin	S	Sheb	G	Own	Own	DP	Tea	.....	Own	UJ	3	Spic	Mer	C	Own	D	12.9	41.56	Own	36x6	40x12	Sch	.....	8272	119	....
Mack AC 15-Ton	6000	Own AC	5 x6	40	L	C	Own	Fin	S	Sheb	G	Own	Own	DP	Tea	.....	Own	UJ	3	Spic	Mer	C	Own	D	14.1	45.26	Own	36x7	40x7†	Sch	.....	8650	119	....
Master DT	3740	Buda HU	4¼x5½	28.9	L	C	Chic	PT	FS	Mas	V	McC	Full	DP	Eis	.....	Full	U	4	Spic	Det	R	Walk	Flot	8.75	42	Ros	34x4	36x7	Wal	.....	4500	130	76
*Walter ST	4850	Own DU	4½x6¼	32.4	L	C	Bus	PT	F	Strm	G	Wau	B-Li	D	Eis	W	War	A	4	Own	.....	...	Own	Flot	10	50	Ros	36x6	40x6†	Day	.....	7800	126	80
Watson	4050	Cont E4	4½x5½	32.4	L	P	Jam	C	FS	Strm	G	Pier	B-Li	DP	Sim	.....	B-Li	U	4	Spic	Shel	W	Timk	Flot	8.75	42.35	Gem	34x4	36x6†	M&C	.....	6500	80	37

ELECTRIC COMMERCIAL CARS

E.C.M. Name and Model Number	Carrying Capacity	Chassis Weight	Chassis Price	Maximum Speed	Battery	Mileage Per Charge	Motor	Controller	Speeds Forward	Drive	Rear Axle	Springs	Front Tires	Rear Tires	Steering Gear	Wheelbase	Per Cent of Weight on Rear Wheels
Ward WS 2	750	1500	.....	13	Opt	45	G-E	Own	4	W	Shel	Shel	32x3	32x3½	Own	88	60
C-T BR2B	1000	2100	1600	14	Opt	55	G-E	Own	4	C-T	Flot	Shel	36x3	36x3½	W	92	65
Walker M	1000	2300	.....	15	Opt	60	West	West	5	O	Own	Math	34x3	36x3½	Ross	94	66
Atlantic 1C	2000	2770	.....	12	Opt	.....	G-E	G-E	4	C	Timk	S-El	34x4	36x4	Ross	103	65
Ward WA 2	1250	2350	.....	12	Opt	45	G-E	Own	4	W	Shel	Shel	32x3½	34x4	Own	90	60
Ward WA	1250	2730	.....	12	Opt	45	G-E	G-E	4	W	Shel	Shel	32x3½	34x4	Own	90	60
C-T BR 2	2000	2400	2150	14	Opt	60	G-E	Own	4	C-T	Flot	Shel	36x3½	36x4	W	101	60
C-T BR 2A	1500	2200	1975	14	Opt	60	G-E	Own	4	C-T	Flot	Shel	36x3	36x3½	W	91⅝	60
Lansden BG ¾	.....	1400	1600	15	Opt	50	G-E	G-E	4	R	Flot	.....	32x4½	32x4½	Lav	90	50
Lansden MC 1	.....	2900	1850	12	Opt	50	G-E	G-E	4	C	Flot	.....	36x3	36x3½	.....	108	60
Walker K	2000	2500	.....	14	Opt	60	West	West	5	O	Own	Math	34x3½	36x4	Ross	96	66
Ward WM	2000	2250	.....	12	Opt	45	G-E	Own	4	W	Shel	Shel	32x3	32x4	Own	88	70
Ward WB	2000	3420	.....	10.5	Opt	40	G-E	G-E	4	W	Shel	Shel	34x4	36x5	Own	102	60
Atlantic 2C	4000	3590	.....	11	Opt	.....	G-E	G-E	4	C	Timk	S-El	34x4	36x3†	Ross	115	65
C-T BR 4	4000	4000	2575	12	Opt	60	G-E	Own	4	C-T	Flot	Shel	36x4	36x4†	W	116	60
Lansden MD 2	.....	4400	2250	11	Opt	50	G-E	G-E	4	C	Flot	.....	36x4	36x3†	.....	120	60
Walker L	4000	3700	.....	13	Opt	60	West	West	5	O	Own	Math	38x4	38x6	Ross	112	66
Ward WD	4000	4500	.....	9	Opt	35	G-E	G-E	4	W	Shel	Shel	36x6	36x7	Own	114	60
Atlantic 3C	7000	5220	.....	10	Opt	.....	G-E	G-E	5	C	Timk	.....	36x5	40x5†	Ross	135	65
C-T AR 7	7000	5000	3550	10	Opt	50	G-E	Own	4	I	Dead	Shel	36x5	36x5†	W	126	60
C-T AK 7	7000	5800	3850	11	Opt	50	G-E	Own	4	I	Dead	Shel	36x6	36x4†	W	122	55
Lansden ME 3½	.....	5700	2950	10	Opt	45	G-E	G-E	4	C	Flot	.....	36x5	36x4†	.....	133	60
Ward WF	7000	6600	.....	8	Opt	30	G-E	G-E	5	W	Shel	Shel	36x6	36x10	Own	132	70
Atlantic 5C	10000	6230	.....	9	Opt	.....	G-E	G-E	5	C	Timk	S-El	36x6	40x5†	Ross	144	65
C-T AK 10	10000	6500	3960	10	Opt	50	G-E	Own	4	I	Dead	Shel	36x7	36x5†	W	132	55
Lansden MT 5	.....	7500	3350	10	Opt	40	G-E	G-E	4	C	Flot	.....	36x6	36x5†	.....	146	60
Lansden MG 6	.....	8900	.....	7	Opt	35	G-E	G-E	4	R	Flot	.....	36x7	36x6†	.....	156	60
Walker P	7000	5300	.....	11	Opt	50	West	West	5	O	Own	Math	36x5	40x5†	Ross	131	66
Walker N	10000	6300	.....	10	Opt	50	West	West	5	O	Own	Math	36x6	40x6†	Ross	141	66
Ward WH	10000	8200	.....	7	Opt	26	G-E	G-E	5	W	Shel	Shel	36x7	40x12	Own	144	70
Atlantic 6C	13000	6940	.....	8	Opt	.....	G-E	G-E	5	C	Timk	S-El	36x6	40x6	Ross	156	65

Manufacturers and Models Included in Specifications on Preceding Pages

Acason—¾, 1, 1½, 2½, 3½, 5—Acason Motor Truck Co., Detroit Mich.
Ace—1½, 2½—American Motor Truck Co., Newark, Ohio.
Acme—¾, 1, 1½, 2, 2½, 3½, 5—Acme Motor Truck Co., Cadillac, Mich.
Ajax—1½—Ajax Motors Corp., Boston, Mass.
Akron Multi-Truck—1¼—Thomart Motor Truck Co., Kent, Ohio.
American—2½, 4—American Motor Truck & Tractor Co., Portland, Conn.
Apex—1, 1½, 2½, 3½—Hamilton Motor Co., Grand Haven, Mich.
Armleder—1, 1½, 2½, 3½—O. Armleder Co., Cincinnati, Ohio.
Atco—1½, 2½—American Truck & Trailer Corp., Kankakee, Ill.
Atlantic—1, 2, 3, 5, 6—Atlantic Electric Vehicle Co., Newark, N. J.
Atlas—1—Atlas Truck Corp., York, Pa.
Atterbury—1½, 2½, 3½, 5—Atterbury Motor Car Co., Buffalo, N. Y.
Autocar—1½, 2, 5—Autocar Co., Ardmore, Pa.
Available—1½, 2, 2½, 3½, 5, 7—Available Truck Co., Chicago, Ill.
Avery—1—Avery Company, Peoria, Ill.
Bartlett—7—Bartlett Truck Co., Chicago, Ill.
Bell—1, 1½, 2½—Iowa Motor Truck Co., Ottumwa, Ia.
Belmont—1, 1½, 2, 3½—Belmont Motors Corp., Lewistown, Pa.
Bessemer—1, 1½, 2½, 4—Bessemer Motor Truck Co., Grove City, Pa.
Birch—1—Birch Motor Cars, Chicago, Ill.
Bridgeport—1½, 2½, 3½—Bridgeport Motor Truck Co., Bridgeport, Conn.
Brinton—1½, 2½—Brinton Motor Truck Co., Philadelphia, Pa.
Brockway—¾, 1½ 2½, 3½, 5—Brockway Motor Truck Co., Cortland, N. Y.
Buffalo—T T—Buffalo Truck & Tractor Corp., Clarence, N. Y.
C. T.—1, 1½, 2, 3½, 5—Commercial Truck Co., Philadelphia, Pa.
Capitol—1½, 2½, 3½—Capitol Motors Corp., Fall River, Mass.
Case—2—J. I. Case Plow Works Co., Racine, Wis.
Chevrolet—¾, 1—Chevrolet Motor Co. of Mich., Flint, Mich.
Chicago—1½, 2½, 3½, 5—Chicago Motor Truck, Inc., Chicago, Ill.
Climber—1½—Climber Motor Corp., Little Rock, Ark.
Clydesdale—¾, 1, 1½, 2½, 3½, 5—Clydesdale Motor Truck Co., Clyde, Ohio.
Collier—1, 1½, 2, 2½—Collier Motor Truck Co., Bellevue, Ohio.
Columbia—1½, 2½—Columbia Motor Truck & Trailer Co., Pontiac, Mich.
Commerce—1¼, 1½, 2, 2½—Commerce Motor Truck Co., Detroit, Mich.
Concord—1½, 2, 2½, 3—Abbott-Downing Truck & Body Co., Concord, N. H.
Corbitt—1, 1½, 2, 2½, 3, 4, 5—Corbitt Motor Truck Co., Henderson, N. C.
Cyclone—1½—The Cyclone Motor Corp., Greenville, S. C.
Dart—1½, 2½, 3½—Dart Truck & Tractor Corp., Waterloo, Ia.
Day-Elder—1, 1½, 2, 2½, 3½, 5—Day-Elder Motors Corp., Newark, N. J.
Dearborn—1, 1½, 2—Dearborn Truck Co., Chicago, Ill.
Defiance—1, 1½, 2—Defiance Motor Truck Co., Defiance, Ohio.
Denby—1, 1½, 2, 3, 4, 5—Denby Motor Truck Co., Detroit, Mich.
Dependable—1, 1½, 2, 2½, 3½—Dependable Truck & Tractor Co., East St. Louis, Ill.
Diamond T—1¼, 1½, 2, 3½, 5—Diamond T Motor Car Co., Chicago, Ill.
Diehl—1, 1½—Diehl Motor Truck Works, Philadelphia, Pa.
Doane—2½, 3½, 6—Doane Motor Truck Co., San Francisco, Cal.
Dodge—½—Dodge Bros., Detroit, Mich.
D-Olt—1½—D-Olt Motor Truck Co., Inc., Long Island City, N. Y.
Dorris—2, 3½—Dorris Motor Car Co. St. Louis, Mo.
Dort—½—Dort Motor Car Co., Flint, Mich.
Double Drive—4—Double Drive Truck Co., Chicago, Ill.
Douglas—1½, 2, 3—Douglas Motors Corp., Omaha, Neb.
Drake—2—Drake Motor & Tire Mfg. Corp., Knoxville, Tenn.
Duplex—2, 3½—Duplex Truck Co., Lansing, Mich.
Duty—2—Duty Motor Co., Elgin, Ill.
Eagle—2—Eagle Motor Truck Corp., St. Louis, Mo.
Earl—1—Earl Motors, Inc., Jackson, Mich.
Erie—1½, 2½—Erie Motor Truck Mfg. Co., Erie, Pa.
F. W. D.—3—Four-Wheel Drive Auto Co., Clintonville, Wis.
Facto—2½—Facto Motor Trucks, Springfield, Mass.
Fageol—2, 3, 4, 6—Fageol Motors Co., Oakland, Cal.
Fargo—2—Fargo Motor Truck Co., Chicago, Ill.
Federal—1, 1½, 2, 3½, 5, T.T.—Federal Motor Truck Co., Detroit, Mich.
Ford—1—Ford Motor Co., Highland Park, Mich.
Forschler—1, 1½, 2, 3—Forschler Motor Truck Mfg. Co., New Orleans, La.
Front Drive—1½—Double Drive Truck Co., Chicago, Ill.
Fulton—1, 2, T.T.—Fulton Motors Corp., Farmingdale, N. Y.
G. M. C.—1, 2, 3½, 5—General Motors Truck Co., Pontiac, Mich.
G. W. W.—1½—Wilson Truck Mfg. Co., Henderson, Ia.
Garford—¾, 1¼, 2, 3½ 5, 7½—Garford Motor Truck Co., Lima, O.
Gersix—1½, 2½, 3—Gersix Mfg. Co., Seattle, Wash.
Giant—1½, 2½, 3½, 5—Giant Truck Corp., Chicago Heights, Ill.
Graham—1, 1½—Graham Brothers, Evansville, Ind.
Gramm-Bernstein—1, 1½, 2, 3, 3½, 4, 5—Gramm-Bernstein Motor Truck Co., Lima, Ohio.
Hal-Fur—2, 3½—Hal-Fur Motor Truck Co., Cleveland, Ohio.
Hall—2½, 3½, 5, 7—Lewis-Hall Motors Corp., Detroit, Mich.
Hendrickson—2½, 3½, 5—Hendrickson Motor Truck Co., Chicago, Ill.
Highway-Knight—4, 5—Highway Truck Corp., Chicago, Ill.
Higrade—1, 1½—Higrade Motors Co., Harbor Springs, Mich.
H. R. L.—¾, 1½, 2½—H. R. L. Motor Co., Seattle, Wash.
Hurlburt—1½, 2½, 3½, 5—Harrisburg Mfg. & Boiler Co., Harrisburg, Pa.
Huron—1½, 2½—Huron Truck Co., Bad Axe, Mich.
Independent—1½, 2½, 3½—Independent Motor Co., Youngstown, Ohio.
Independent—1, 1½, 2½—Independent Motor Truck Co., Inc., Davenport, Ia.
Indiana—1½, 2, 2½, 3½, 5—Indiana Truck Corp., Marion, Ind.
International—1, 1½, 2, 3, 5—International Harvester Co., Chicago, Ill.
Italia—2, 3, 5—Italia Motor Truck Co., San Francisco, Cal.
Jackson—3½—Jackson Motors Corp., Jackson, Mich.
Kalamazoo—1½, 2½, 3½—Kalamazoo Motor Corp., Kalamazoo, Mich.
Kearns—¾, 1½—Kearns-Dughie Motors Co., Danville, Pa.
Kelly-Springfield—1½, 2½, 3½, 5, 6—Hare's Motors, Inc., New York, N. Y.

Keystone—2—Keystone Motor Truck Corp., Philadelphia, Pa.
Kimball—2, 2½, 3, 4, 5—Kimball Motor Truck Co., Los Angeles, Cal.
Kissel—1, 1½, 2½, 4, 5—Kissel Motor Car Co., Hartford, Wis.
Kleiber—1, 1½, 2, 2½, 3½, 5—Kleiber & Co., Inc., San Francisco, Cal.
Koehler—1½, 2½, 3½, T.T.—H. J. Koehler Motors Corp., Bloomfield, N. J.
Lange—2, 2½—Lange Motor Truck Co., Pittsburgh, Pa.
Lansden—¾, 1, 2, 3½, 5, 6—Lansden Company, Danbury, Conn.
Larrabee-Deyo—1½, 2½, 3½, 5—Larrabee-Deyo Motor Truck Co., Inc., Binghamton, N. Y.
Lombard—T.T.—Lombard Auto Tractor Truck Corp., New York, N. Y.
Luedinghaus—1, 1½, 2—Luedinghaus-Espenschied Wagon Co., St. Louis, Mo.
Luverne—2, 3,—Luverne Automobile Co., Luverne, Minn.
Maccar—1½, 2, 2½, 3½, 5—Maccar Truck Co., Scranton, Pa.
MacDonald—7—MacDonald Truck & Tractor Co., San Francisco, Cal.
Mack—1½, 2, 2½, 3½, 5, 6½, 7½, T.T.—International Motor Co., New York, N. Y.
Master—1½, 2½, 3½, 5, T.T.—Master Trucks, Inc., Chicago, Ill.
Maxwell—1½—Maxwell Motor Co., Inc., Detroit, Mich.
Menominee—1, 1½, 2, 3½, 5—Menominee Motor Truck Co., Menominee, Mich.
Moline—1½—Moline Plow Co., Moline, Ill.
Moreland—1½, 2½, 4, 5—Moreland Motor Truck Co., Los Angeles, Cal.
Napoleon—¾, 1, 1½—Napoleon Motors Co., Traverse City, Mich.
Nash—1, 2—Nash Motors Co., Kenosha, Wis.
Nelson-LeMoon—1½, 2½, 3½, 5—Nelson & LeMoon, Chicago, Ill.
Netco—2, 2½—New England Truck Co., Fitchburg, Mass.
Niles—2—Niles Motor Truck Co., Pittsburgh, Pa.
Noble—1½, 2, 2½, 3½—Noble Motor Truck Co., Kendallville, Ind.
Northway—2, 3½—Northway Motors Co., Natick, Mass.
Norwalk—1, 1½—Norwalk Motor Car Co., Martinburg, W. Va.
O. K.—1½, 2½, 3½—Oklahoma Auto Mfg. Co., North Muskogee, Okla.
Ogden—1½, 2½, 3½, 5—Ogden Motor Truck Co., Chicago, Ill.
Old Reliable—1½, 2½, 3½, 5, 6—Old Reliable Motor Truck Co., Chicago, Ill.
Oldsmobile—1—Olds Motor Works, Lansing, Mich.
Olympic—2½—Olympic Motor Truck Co., Tacoma, Wash.
Oshkosh—2, 2½—Oshkosh Motor Truck Mfg. Co., Oshkosh, Wis.
Packard—2, 3, 5—Packard Motor Car Co., Detroit, Mich.
Paige—1½, 2½, 3½—Paige-Detroit Motor Car Co., Detroit, Mich.
Parker—2, 3½, 5—Parker Motor Truck Co., Milwaukee, Wis.
Pierce-Arrow—2, 3½, 5—Pierce-Arrow Motor Car Co., Buffalo, N. Y.
Pioneer—1—Pioneer Truck Co., Chicago, Ill.
Pittsburger—2½, 3½—Pittsburgh Truck Mfg. Co., Pittsburgh, Pa.
Power—1½, 3½—Power Truck & Tractor Co., St. Louis, Mo.
Premocar—1½—Preston Motors Corp., Birmingham, Ala.
Rainier—¾, 1, 1½, 2, 2½, 3½, 5—Rainier Motor Corp., Flushing, L. I., N. Y.
Ranger—2—Southern Motor Mfg. Ass'n, Ltd., Houston, Tex.
Reliance—1½, 2½—Reliance Motor Truck Co., Appleton, Wis.
Reo—1¼—Reo Motor Car Co., Lansing, Mich.
Republic—¾, 1, 1½, 2½, 3½—Republic Motor Truck Co., Inc., Alma, Mich.
Riker—3, 4—Locomobile Co. of America, Bridgeport, Conn.
Rowe—1½, 2, 3, 4, 5—Rowe Motor Mfg. Co., Lancaster, Pa.
Ruggles—1½, 2—Ruggles Motor Truck Co., Saginaw, Mich.
Rumely—1½—Advance-Rumely Thresher Co., Inc., La Porte, Ind.
Samson—¾, 1¼—Samson Tractor Co., Janesville, Wis.
Sandow—1, 1½, 2, 2½, 3½, 5—Sandow Motor Truck Co., Chicago, Ill.
Sanford—2½, 3½, 5—Sanford Motor Truck Co., Syracuse, N. Y.
Schacht—2, 3, 4, 5, 7—G. A. Schacht Motor Truck Co., Cincinnati, O.
Schwartz—1¼, 1½, 2½, 5—Schwartz Motor Truck Co., Reading, Pa.
Selden—1½, 2½, 3½, 5—Selden Truck Corp., Rochester, N. Y.
Service—¾, 1¼, 1½, 2, 2½, 3½, 5—Service Motor Truck Co., Wabash, Ind.
Signal—1, 1½, 2½, 3½, 5—Signal Motor Truck Co., Detroit, Mich.
Southern—1, 1½, 2—Southern Truck & Car Corp., Greenboro, N. C.
Standard—1, 2½, 3½, 5—Standard Motor Truck Co., Detroit, Mich.
Sterling—1½, 2, 2½, 3½, 5, 7½—Sterling Motor Truck Co., Milwaukee, Wis.
Stewart—¾, 1, 1½, 2, 2½, 3½—Stewart Motor Corp., Buffalo, N. Y.
Stoughton—¾, 1, 1½, 2, 3—Stoughton Wagon Co., Stoughton, Wis.
Super Truck—2½, 3½, 5—O'Connell Motor Truck Co., Waukegan, Ill.
Superior—1, 2—Superior Motor Truck Co., Atlanta, Ga.
Tiffin—1½, 2½, 3½, 5, 6—Tiffin Wagon Co., Tiffin, Ohio.
Titan—2, 3½, 5, 6—Titan Truck Co., Milwaukee, Wis.
Tower—1½, 2½, 3½—Tower Motor Truck Co., Greenville, Mich.
Traffic—1½, 2, 3—Traffic Motor Truck Corp., St. Louis, Mo.
Transport—1, 1½, 2½, 3½—Transport Truck Co., Mt. Pleasant, Mich.
Traylor—1½, 2, 3, 4, 5—Traylor Eng. & Mfg. Co., Cornwells, Pa.
Triangle—¾, 1½, 2, 2½—Triangle Motor Truck Co., St. Johns, Mich.
Triumph—1½, 2, 2½—Triumph Truck & Tractor Co., Kansas City, Mo.
Ultimate—1½, 2, 2½, 3—Vreeland Motor Co., Inc., Newark, N. J.
Union—2½, 4, 6—Union Motor Truck Co., Bay City, Mich.
United—1½, 2½, 3½, 5—United Motors Co., Grand Rapids, Mich.
Ursus—1, 1½, 2½, 3½—Ursus Motor Co., Inc., Chicago, Ill.
U. S.—1½, 3, 4, 5—United States Motor Truck Co., Cincinnati, Ohio.
Velie—1½—Velie Motors Corp., Moline, Ill.
Vim—½, 1, 2, 3—Vim Motor Truck Co., Philadelphia, Pa.
Vulcan—2½—Vulcan Mfg. Co., Seattle, Wash.
Walker—½, 1, 2, 3½, 5—Walker Vehicle Co., Chicago, Ill.
Walker-Johnson—2½—Walker-Johnson Truck Co., Woburn, Mass.
Walter—2, 2½, 3½, 5, 7—T. T. Walter Truck Co., New York, N. Y.
Ward—¼, 1, 2, 3½, 5—Ward Motor Vehicle Co., Mt. Vernon, N. Y.
Ward La France—2½, 3½, 5—Ward La France Truck Co., Inc., Elmira, N. Y.
Watson—¾, 3½, T.T.—Watson Wagon Co., Canastota, N. Y.
White—¾, 2, 3½, 5—White Co., Cleveland, Ohio.
White Hickory—1, 1½, 2½—White Hickory Motor Corp., Atlanta, Ga.
Wichita—1, 1½, 2, 2½, 3, 3½, 5½—Wichita Falls Motors Co., Wichita Falls, Tex.
Wilcox—1, 1½, 2½, 3½, 5—Wilcox Trux, Inc., Minneapolis, Minn.
Wilson—1½, 2½, 3½, 5—J. C. Wilson Co., Detroit, Mich.
Winther—1, 1½, 2, 2½, 3½, 5, 7—Winther Moter Truck Co., Kenosha, Wis.
Wisconsin (Loganville)—2, 2½—Wisconsin Truck Co., Loganville, Wis.
Wisconsin (Sauk City)—1, 1½, 2½, 3½—Wisconsin Farm Tractor Co., Sauk City, Wis.
Witt-Will—1½, 2—Witt-Will Co., Inc., Washington, D. C.
Wolverine—1, 1½, 2, 2½, 3½—American Commercial Car Co., Detroit, Mich.
Yellow Cab—¾, 1¼—Yellow Cab Mfg. Co., Chicago, Ill.
Young—1, 2, 3½—The Young Motor Truck Co., Euclid, Ohio.

Using the Truck for Effective Outdoor Advertising

Using the chassis of a GMC one and a half ton truck as a foundation, a most attractive and effective advertising medium has been created by the Hazen J. Titus Fruit Cake Company, of Seattle, Wash. This firm is selling fruit cake to every country in the world. Around this fact was this novel advertising scheme constructed. A huge paper maché globe of the world revolves so that all the countries to which the cake is being sent are shown. The revolving "world" attracts immediate attention and the car being driven slowly facilitates the reading of the placards so that it has become one of the most efficient salesman in the organization. Bedecked with national banners and encircling the circumference, a wide purple band, on which is lettered conspicuously, "Say It With Fruit Cake—it lasts longer!" This truck bears a magnetic influence upon observers. Outfit traverses the entire city from early morning until late evening.

This truck, formerly employed by Mr. Titus in the commissary department of another concern, is now used exclusively for advertising purposes.

To sustain Seattle's rapidly growing reputation as the "Sweetest City on Earth," it was necessary to do extensive advertising, and although every type of medium has been used in the campaign, Mr. Titus says that in attracting attention and getting the message over, the GMC truck pictured has been one of the most effective methods of publicity that the organization has ever conceived.

AY IT WITH FRUIT CAK
WHEN WE CEASE TO GIVE WE CEASE TO HAVE'
NOT THE CHEAPEST FRUIT CAKE BUT THE BEST!
LET US SEND A 1½lb. 3lb. OR 5lb. FRUIT CAKE TO YOUR LOVED ONE OR FRIEND
$1.25 lb. PACKED IN BEAUTIFUL LITHOGRAPHED CONTAINERS
MAILED POSTAGE PREPAID TO ANY PART OF WORLD.

Truck Helps to Make Seattle the "Sweetest City on Earth"

Personal, Factory and Dealer Notes

(*Continued from page 64*)

The National Electric Welding Co., of Philadelphia, has moved to 224 North Camac St., where ample room is afforded for its growing business. The firm is equipped with trucks carrying their own electric generating and air compression units.

The Richardson-Phenix Co., and S. F. Bowser & Co., Inc., manufacturers of lubricating apparatus, have effected a consolidation, the new firm to be known as S. F. Bowser & Co. The assets of the consolidation are valued at $10,000,000, the headquarters being at Ft. Wayne, Ind.

The Butler Automotive Steel Co., of Easton, Pa., is the new name of the corporation now known as the Butler Edwards Electric Co., manufacturer of replacement axle shafts. The company has been using a day and night shift since May, and has been compelled to add new capital and equipment for the new business anticipated for 1922.

New Agencies

The Republic Truck Sales Corp., of Alma, Mich., has opened a direct factory branch at Vandeventer Ave. and Washington Blvd., St. Louis. Carl Simons has been appointed manager.

The Hydro-United Tire Co., of Pottstown, Pa., has established a Pacific Coast branch at 410 Beach St., San Francisco, Calif. It is intended to be a receiving point for 25,000 tires a week.

The Paragon Tool Co., of Seattle, Wash., has been appointed warehouse distributor for DeLuxe light weight gray iron pistons, covering the Pacific Northwest. The firm will carry a stock of about 25,000 pistons.

The Arnold Tire Co., of St. Louis, has been appointed distributor for the Winterfront automatic radiator shutter, made by the Pines Manufacturing Co., of Chicago. Ill. The new distributor will cover Eastern Missouri and Southern Illinois.

Chadick, De Lamater Corp., 159 West 24th St., New York City, has signed a contract with the Warner Gear Co., of Muncie, Ind., to represent them in the Metropolitan territory, including the contiguous territory in the states of New York, New Jersey and Connecticut.

The Campbell-Niedringhaus Co., distributors for Lee tires in Pittsburgh. Baltimore and Philadelphia, have succeeded the Lee Tire Service Co., as St. Louis representatives for the Lee Tire & Rubber Co., of Conshohocken, Pa. Roscoe C. Buckley has been made branch manager.

Literature

Forging Ahead is an attractive little booklet issued by the Union Switch & Signal Co., Swissvale, Pa., which describes the typical forgings made by the company.

For Whom Are You Working?, the speech of Norval A. Hawkins, Director of Sales-Advertising-Service Section of the General Motors Corp., delivered at the N. A. C. C. service manager convention, is in booklet form and is now being distributed. The speech was printed in the COMMERCIAL CAR JOURNAL in a condensed form.

Activities of the Motor Truck Association of Philadelphia

OFFICERS

THOS. K. QUIRK, Presiden — D. H. ZIMMERMAN, Vice President

W. H. METCALF, Sec'y, 328 N. Broad Street — W. R. WALTON, Treasurer

BOARD OF GOVERNORS

H. A. NEILL — W. A. MANWARING — H. O. STEHLING

W. ROSS WALTON — GEORGE G. SHEARER

THE COMMERCIAL CAR JOURNAL OFFICIAL ORGAN

THE Philadelphia Motor Truck Association at its monthly meeting at the Hotel Adelphia took steps to solve the problem of the proper resale prices on used trucks. Charles F. Woltz was made the head of the committee to call a meeting of sales managers of the truck dealers to obtain data from consumers and to suggest methods of adjusting this matter to the satisfaction of both dealer and truck owner.

The question was precipitated by an address on "The Used Motor Truck Problem," by Samuel W. Traylor, president of the Traylor Engineering Company, in which he advocated closer association between manufacturers, dealers and users of trucks, whereby all second-hand trucks should be inspected and appraised by a competent authority, thus entitling the dealer whose trucks passed the inspection, to a certificate permitting him to place the job on sale.

Trucks not passing the inspection would be classed as worn out and would be scrapped immediately.

Mr. Woltz suggested having the sales managers further investigate the proposal. John Farnsworth, of the Ebert Motor Truck Company, suggested following the plan of the printing machinery manufacturers and dealers who allow ten per cent of the cost of new machinery to apply uniformly on the trade-in price of old salable machinery. This plan was favored by W. H. Metcalf, secretary, as practical, but he endorsed also a conference of sales managers, instancing also the sewing machine, typewriter and other old line industries who follow practically the same policy. The failure of appraising bureaus in Chicago was due to lack of dealer co-operation, and added that this problem must be solved if the truck industry is to become permanent.

A. R. Miller, of the Troy Trailer, suggested paying salesmen a commission on all repair parts sold and advocated keeping trucks so well repaired that the old bus type would be eliminated. He regarded this as better than the appraising bureau idea.

The retiring president, Walter Y. Anthony, deplored the undue allowance prices of some concerns as destructive of business, and J. H. Brook, of Trenton, N. J., explained how the matter is handled in that city.

Fletcher W. Stites, an invited guest speaker, made a patriotic address on "The Foundation of the Republic."

The following officers, nominated at the November meeting were elected: President, Thomas K. Quirk; vice-president, D. H. Zimmerman; secretary—for the ninth successive term—W. H. Metcalf; treasurer, W. Ross Walton; directors for two years, Walter Y. Anthony and H. A. Neill, directors for three years, W. A. Manwaring, George G. Shearer and H. O. Stehling.

Seiberling's Project Now Under Way

With the purchase of the Lehigh and Portage Rubber companies by the new Seiberling Rubber Co., the manufacture of Lehigh and Huskie tires has been discontinued, and the plants will be used for the production of Seiberling and Portage tires and tubes exclusively.

The Lehigh plant at New Castle, Pa., is now given over to the making of Seiberling tubes, Seibering clincher cord tires and Portage clincher tires. At the Barberton Seiberling plant, formerly the Portage Rubber Co., Huskie tires have become a thing of the past, and the plant is devoted to Seiberling straight side cords, Portage straight side cords and Portage straight side fabrics.

It is the announced purpose of the Seiberling Co. to confine its tire manufactory to Seiberling cord tires and to the Portage line, which has been improved throughout. The Seiberling cords will be made with but one tread, the Seiberling non-skid, and the Portage, with only the Portage Slid-Lock tread. One of the interesting features of both of these new lines is that the tread stock is carried from bead to bead. Both brands of tires will be black.

H. W. Smith, who operated the Lehigh plant, under its former ownership, will continue as manager of it, under W. S. Wolfe, vice-president of the Seiberling Co., in charge of production. C. A. Dwyer and C. A. Reed, who have been engaged in selling Lehigh tires, are entering the regular Seiberling sales organization, Mr. Dwyer as salesman in the territory of the Akron branch, and Mr. Reed on Akron factory sales staff.

NEW COMMERCIAL CARS

Graham-Dodge Quick Delivery Job

THE Graham Bros. quick delivery job with Dodge Bros. power plant is a development following a business relationship of four years between Graham Bros. and Dodge Bros. But it was not until recently that arrangements were completed for the exclusive distribution of the job through Dodge Bros. dealers.

A standardized line of truck bodies developed by the Graham Bros. enables Dodge dealers to fit this chassis with a body specially designed for any kind of business. The manufacturers also lay particular import upon the elimination of excess weight in the production of this chassis, thereby securing maximum operating economy on pneumatic tires.

The Dodge engine is rated at 30-35 brake hp. and at 24.03 hp. (the latter N. A. C. C. rating). It is suspended from three points and mounted in unit. It is a four cylinder, "L" head, cast in block type with a bore and stroke of 3⅞ in. x 4½ in., respectively. Lubrication is pump and splash, the pump being driven by spiral gears from the crankcase. The cooling system, which has a capacity of 2⅝ in. gal., includes the familiar Dodge radiator and a centrifugal pump. Battery and distributor system of ignition with automatic spark advance and manual control is used. The starter system includes a 12-volt single unit starter-generator and a 12-volt storage battery.

Fuel is fed to a specially designed carburetor by a vacuum system from a 15-gal. gasoline tank located under the seat. The tank is fitted with a fuel gage.

From the engine the power is transmitted through a dry-plate, disk clutch having a ball thrust release mechanism to a sliding gear transmission providing three speeds forward and one reverse. From this point the power is carried back through a tubular steel two-piece propeller shaft equipped with three universal joints to a bevel-gear rear axle of the semi-floating type. Load and side thrust is taken up by double roller bearings. The final gear ratio is 6.22 to 1.

The steering gear, which is Dodge, is of the worm and worm wheel type. It is mounted on the left side and has a 17-in. steering wheel. Control levers are mounted directly over the transmission case, which is in the center.

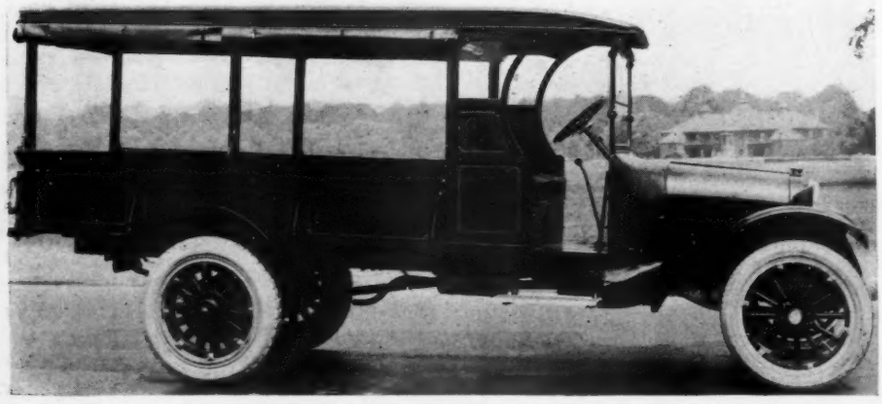
The brakes are of the internal expanding and external contracting type, connecting to the service pedal and emergency lever through rocker shafts.

Four chrome vanadium steel, semi-elliptic springs support the one-piece pressed steel frame. The side rails are 194 in. long, 4 9/16 in. deep, and 3-16 in. thick. The cross members are of special design and securely riveted to the side rails. The rear springs are 46½ in. long, 3 in. wide, and are eight in number. The top leaf is made of alloy steel, balance carbon steel, and the spring eyes are provided with bronze bushings.

Pneumatic equipment consist of 32 x 4-in. cords in front and 34 x 5 or 36 x 6-in. truck cords in the rear. The rear rims are 34 x 5-in. heavy truck type, demountable.

The wheelbase is 140 in., providing frame space back of cab for a 9-ft. body. The tread is 56 in. The capacity of this job is 1-1½ tons and the weight 2500 lb. The standard equipment includes electric horn, license brackets, tire pump, jack, tool kit, Alemite high pressure grease gun, clear vision, ventilating windshield equipped with windshield cleaner, two electric head lamps with dimmer, tail lamp and instrument board lamp.

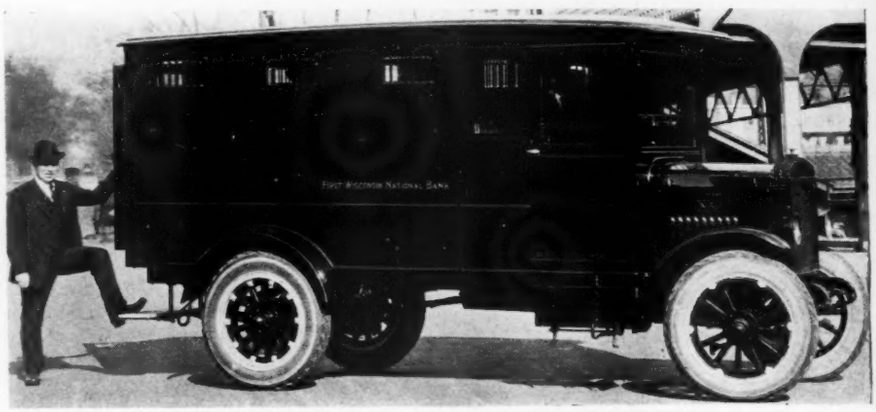
The price complete with canopy body No. 2010 as shown in the accompanying illustration is $1550 f.o.b. factory.



New Graham-Dodge Quick Delivery Model

Heil Armored Bank-Body for One-Ton Chassis

The Heil Co., Milwaukee, Wis., recently built an armored body for financial transfers between banks. This job marks another field now entertained by Heil Co.



New Heil Armored Bank-Body Immune Against Highwaymen Attacks

The armored bank body, as shown herewith, is 12 ft. 6 in. x 4 ft. 6 in. x 5 ft. high over all. The body is fitted with one door at rear and one door on each side at front. These doors have special folding steps, so that when the door is closed the steps fold up, leaving no ledge on which a gang of highwaymen could hang on in an attempt to oust the driver and guard. The sides and rear are covered with No. 12 gage bullet-proof steel. All seams and edges are covered by 1½ in. half oval. The front is fitted with special heavy glass windshield. The three windows on each side in the body proper, as well as the windows in the doors and cab, are of heavy French beveled plate glass, and protected with 7-16 in. cold rolled steel bars held in place by 1½ x 1½ x ¼ bound-in

angles. The rear fenders are integral with the body.

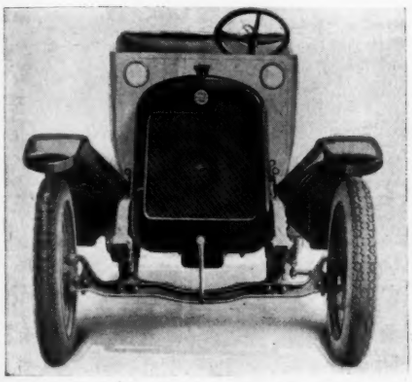
The roof is covered with 10 oz. black canvas duck. The frame proper is made of white oak and ash. The interior sides are covered with 3 in. cypress ceiling and the roof with 1½ in. cypress and bass wood alternated, with natural wood finish or stained mahogany finish. The floor is made of kiln dried white oak. There are two hinged seats on the inside accommodating three guards. The seats are furnished with leather cushions. The driver's seat is separated from the main body compartment with wooden partition with window protected with steel bars.

The body is painted on the outside as follows: 1 coat primer, 2 coats of lead, 7 coats filler, 3 coats of color, 3 coats of rubbing varnish, 1 coat of finish varnish. Weight of body, approximately, 2120 lb.

Ruggles Announces New Two-Ton Business Truck

THE Ruggles Motor Truck Co., Saginaw, Mich., has followed its one-ton truck with a two-tonner, which the makers assert maintains the same relative position in its field that is maintained by the one-ton model in its class.

The new model weighs 3950 lb. and is empowered with a 38 hp. engine designed to carry maximum payloads and negotiate hills and bad roads without strain.



Front View of Latest Ruggles

Appearance as well as serviceability has been incorporated in the new model. It is fitted with crown fenders, an attractive black radiator and hood, flush-mounted lamps and other features that add to appearance. The advertising value of appearance has not been lost sight of in the finishing touches of this job.

The engine is a Ruggles—a four-cylinder, cast in block L-head engine with detachable cylinder head. Its 4 in. bore and 5 in. stroke delivers 38 hp. at 1600 r.p.m.

It has a 3-point suspension mounting and a 3-bearing crankshaft made of drop-forge heat-treated vanadium alloy steel. Cooling is secured by centrifugal pump and by water jackets extending the full length of the cylinder barrels. A submerged gear pump, driven by a spiral gear from the camshaft, provides full pressure lubrication through drilled crankshaft to main and connecting rod bearings. The connecting rods themselves are vanadium alloy steel "I" beam sections drop-forged and heat-treated. All the wearing parts are provided with bronze bushings.

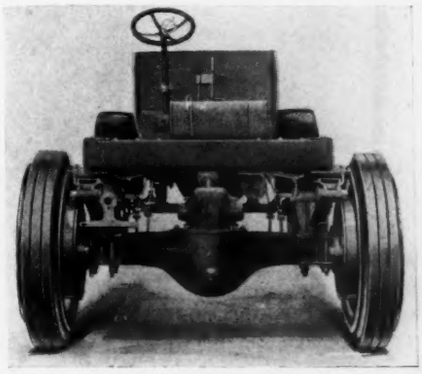
A hot spot manifold is provided to insure thorough carburetion.

Final drive is through a double reduction axle with the final reduction in the differential.

All internal working parts are protected from dirt, water and other harmful substances by an air-tight housing. Differential gears and bearings are full size and mounted in a single assembly.

Standard units have been adopted for the other parts of the truck. It has Stromberg carburetor; Alemite high pressure grease lubrication system; Brown-Lipe multiple dry disk clutch; tubular propeller drive shaft with three enclosed Spicer universal joints; Bosch high-tension magneto ignition; Jacox worm and split nut type irreversible steering gear; Brown-Lipe sliding selective type transmission, four speeds forward and one reverse.

Standard tire equipment is 34 x 5 non-skid cord in front, optional with 34 x 4 solid; rear 34 x 7 solid. Where all-pneumatic equipment is desired the recommended sizes are front 36 x 6, rear 40 x 8.



Rear View, Showing Axle Assembly

The standard wheelbase is 148 in. and the long wheelbase, delivered as a special order, 165 in. The chassis length over all, 220 in.; from dash to rear of frame 170 in.; width of frame 34 in.; width over all 68 in. Distance from back of seat to rear end of frame, 134 in. The wheelbase is 58½ in.

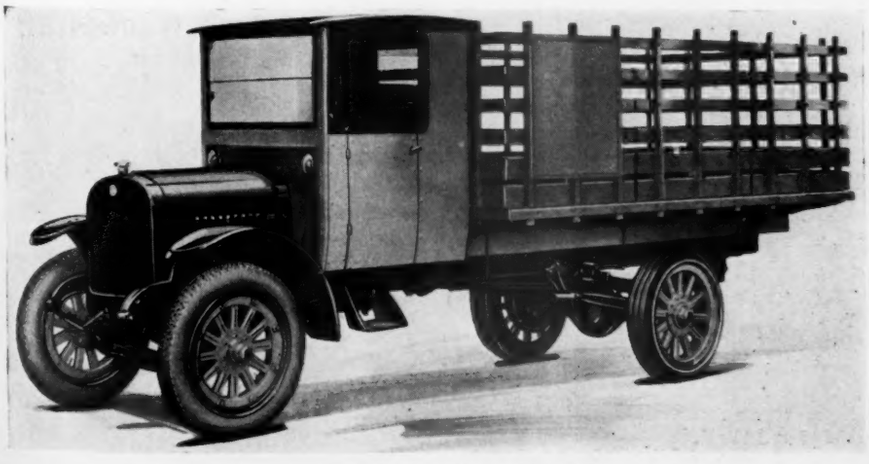
Standard equipment includes: Oil lights front and rear, tools and kit including jack, wheel puller and hand tire pump, seat and cushions, hand horn.

The Ruggles Motor Truck Co. is prepared to furnish with the two-ton truck a choice of bodies if desired.

Each truck is equipped with an all-weather cab. There is plenty of leg room for the driver and the left-hand door is fitted with a handy pocket for carrying bill or receipt book. Heavy plaited black upholstered cushions built over braced spiral springs, make a comfortable driving seat.

Read the February Bus Review

It will contain much valuable information in the form of articles and reviews. Good roads have increased the popularity of bus transportation in the eyes of the traveling public. Post yourself on up-to-date bus data.



Ruggles Latest Addition is a Two-Ton Business Truck

Black & Decker Offers Freight Allowance

The Black & Decker Mfg. Co., builder of portable electric tools, announces that, effective January 3, 1922, a freight allowance on shipments of 100 lb. or over to points in the United States and Canada, has been made. Jobbers may now sell without adding anything to the price to cover freight.

New Service Three-Quarter Ton Speed Job

WITH the advent of the new year the Service Motor Truck Co., Wabash, Ind., started production on a new Red Pyramid speed truck, known as Model 12, and capable of speed of from 25 to 40 m.p.h.

It is a three-quarter ten speed job, with a 128-in. wheelbase, built along practically the same lines as the company's 1 to 1¼-ton speed truck, Model 12. The price is $1240, list.

The engine is a Midwest, heavy-duty truck type, having a 3¼-in. bore and 4½-in. stroke. The cylinders are cast enbloc, and integral with the upper half of case. Valves are of the overhead type, and head is detachable. Lubrication is force feed. The oil is pumped under pressure by a self-priming geared pump. An automatically controlled plunger regulates oil flow in relation to actual load on engine, and not on speed of engine. This feature overcomes excess oiling at light or medium loads, and provides ample lubrication for full load. Ample water space around valves, spark plugs and combustion chambers is provided. An actual horse power of 32 is developed at 2000 r.p.m.

A plain tube type carburetor with hot air stove, hot spot manifold and choker located in instrument board make up the carbureting system. The gasoline tank is carried in the cowl and has a capacity of 12 gal. Ignition is by battery and Remy distributor. The spark is controlled by a hand lever located underneath the steering wheel.

Cooling is through a continuous tube and fin-type radiator, having a pressed shell. The radiator is mounted on leather pads. Cooling is further aided by a 16-in. belt-driven fan. The water is circulated by the Thermo-Syphon system.

From the engine the power is carried through a single 10-in. dry-plate clutch to a selective type transmission, providing three speeds forward and one reverse. The gearset is mounted in unit with clutch and engine.

A 2½-in. tubular shaft equipped with a metal universal and slip joint at front end where it connects to transmission, and a flexible fabric joint at rear end, connecting to axle, makes up the propeller shaft equipment. Final drive is through a Timken spiral-bevel rear-axle.

The front axle is specially designed to accommodate transverse front spring construction. It is a drop forged "I" beam section of alloy steel, heat-treated.

Both service and emergency brakes are of the internal expanding cam actuated type. The brake drums are 15-in. in diam. and brake shoes 2½ in. wide. Service brakes are operated by foot pedal. Emergency brakes are operated by hand lever. Both brakes being inside of drums, avoid interference with skid chains.

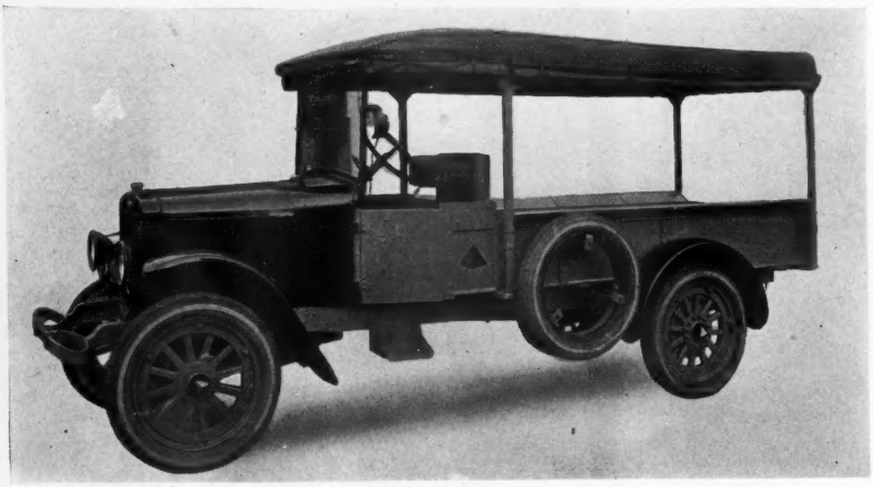
Control is center with left-hand drive. The gear shift and emergency brake levers are mounted on the transmission. Spark and throttle controls are by hand lever under steering wheel. Throttle control is also by foot accelerator. Steering is by a Ross worm and nut type gear furnished with an 18-in. steering wheel.

The frame is of pressed steel channel section, 5⅞-in. deep by 3 in. flange width by ⅛-in. stock. Depth tapers from 5⅞-in. between dash and rear spring front hanger to 3¾-in. at ends. Length back of seat to end of frame, 95 in.; width, 30¾-in. front and 37¼-in. rear. Chassis, 29 in. high.

Semi-elliptic springs are used both in front and rear. The single front spring is pivoted to the frame at the center, thus together with rear springs providing a three-point suspension of frame. The front spring is 38 in. long x 2½-in. wide, and has 9 leaves. The rear springs measure 50 in. long x 2½-in. wide, and consist of 9 load-carrying leaves and 3 rebound leaves. All are bronze bushed for 1¼-in shackle bolts. Chassis lubricating provisions include automatic splash feed shackle bolts, and self-lubricating bushings for brake shafts, etc.

Wood, artillery type wheels, containing 12 1½-in. spokes, and equipped with 32 x 4½ pneumatic cords front and rear, are used.

Regular equipment includes Remy electric starting and lighting equipment, Exide battery, electric head lamps, cowl light, tail lamp, electric horn, jack, tire pump, set of tools, oil can, spring bumper, front fenders, step, instrument board, gasoline tank, toe and floor boards, speedometer, extra rim, seat cushion, and tire repair kit.



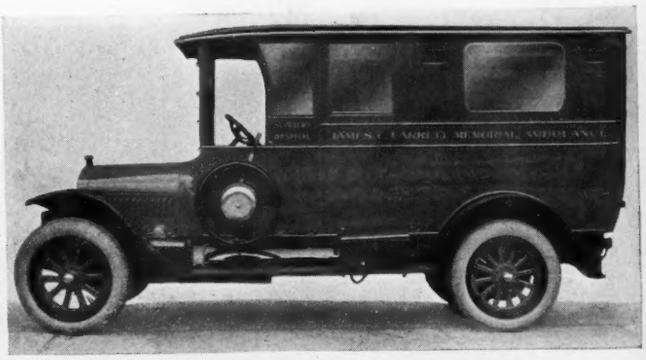
Recently Announced Model 12 Red Pyramid Speed Truck Listed at $1240

Combination Brown Ambulance

THE Brown Body Corp., 3147 Superior Ave., E., Cleveland, Ohio, is offering a special ambulance body possessing a combination feature, which permits its use for ambulance and invalid coach work, floral and necessary undertaker equipment deliveries to and from residences, and, in an emergency, can be converted into a hearse by installing a portable hearse floor. This affords an undertaker of moderate means an opportunity of securing a single unit which will take care of all his requirements.

The interior of this body is panelled to the roof. The cross ribs of the roof, however, are exposed. All corners are rounded and the deck is covered with the same material as the inside panels. Interior finish is mahogany, oak, natural wood or white enamel.

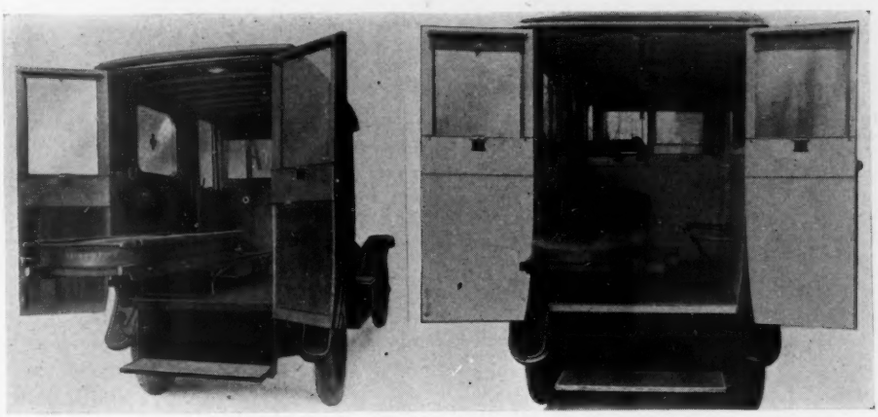
All material entering into the construction of this body is quality grade and includes 16 gage aluminum panels on the outside. The length of body from back of driver's seat is 7 ft. 7 in.; width, at floor line, 43 in.; width, at belt, 50 in., and height, in center, 62 in.



Side View of the Brown Combination Ambulance

The following is a brief resume of interior equipment: A specially constructed couch cot, which slides out 2-3 of its length, is provided to receive patients. It has an adjustable head rest, special tempered steel springs and is covered with imported leather. Two drawers are furnished in the base of this cot for small surgical equipment. In addition to the cot, a standard type of roll stretcher with special irons and hooks for suspending the same immediately over the cot is also provided. Hence, this ambulance will accommodate two patients. Other equipment includes two folding, cane-seated, attendant chairs; two electric dome lights; roll-curtains on all windows; floor covered with heavy linoleum, and medicine cabinet in upper front end of body. All of the interior equipment can be easily removed for a thorough fumigation or cleansing.

The windows back of the driver's seat and in all the doors drop in pockets. The folding rear-steps are operated from the inside. Full length running boards, dust-shield and special rear fenders are provided. The driver's compartment is trimmed in black leather with high lazy-back. The door on the left side of the compartment is blind, and is equipped with a tire carrier and provision is also made for a double-toned, hand-operated gong.



Interior Views, Showing Complete Equipment and Hospital Appointments

Reo Taxicab Chassis Makes Its Debut

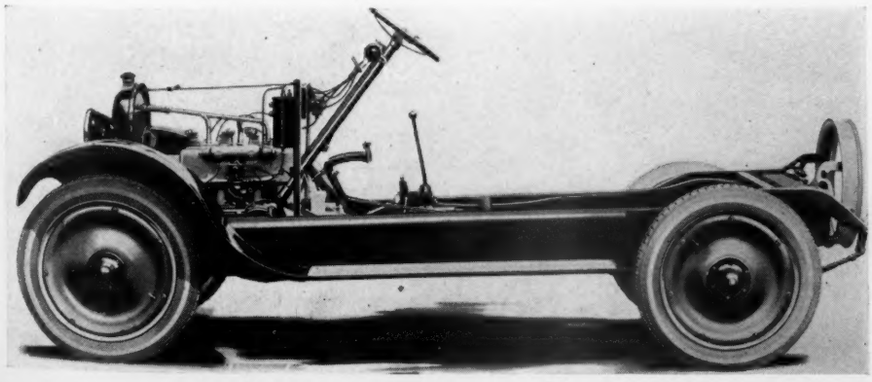
DESIGNED and built expressly for taxi service, a taxicab chassis, to be known as Model V, has just been announced by the Reo Motor Car Co. A careful survey of this model will disclose it as being particularly adapted for the work it is intended to do—taxicab service.

Knowledge of the requirements of taxicab service is the working basis upon which this new job was designed. It has been found that foremost among the qualifications necessary for successful operation in taxicab service are durability and stamina, reasonable speed, quick self-starting and pick-up, and ample spring resiliency. Economy of operation and particularly economy of maintenance are also vital factors.

The taxicab model is a combination of Reo passenger car and speed-wagon units, mounted on a frame especially designed for taxicab work. Practically everything entering into the mechanism of Reos is made in its own plant from designs worked out by its own engineering department.

The chassis was on exhibition during the New York show at Broadway & 54th St. During the Chicago show it will be shown on the Reo sales room floor at 2501 S. Michigan Ave. The price of the chassis is $1350 f.o.b. Lansing, plus federal tax —this includes rear fenders but does not include the false dash shown in the illustration.

The wheelbase of the new chassis is 113 in., which is 7 in. shorter than the touring car, and 15 in. shorter than the speed wagon. Turning radius 19 ft. The engine is the familiar 4-cylinder speed wagon engine. It has 4⅛ in. bore with 4½ in. stroke; cylinders cast in pairs with head integral. Transmission is of selective type, equipped throughout with high-duty Hyatt roller bearings. Clutch is multiple dry-disk type with 13 steel plates. Rear axle is full floating and employs large Timken bearings. Steering gear is adjustable bevel gear and internal sector and pinion type. Springs are 2 in. wide, being 38 in. long in front and 54 in. long in rear. Wheels are 32 in. x 4 in. Tuarc disk steel carrying 33 in. x 4½ in. Royal cord non-skid tires. Electrical equipment includes the standard Reo starter. A sub-frame carries all important working units, thereby relieving them from road stresses and strains.



Latest Developments of the Reo Motor Co. Specially Designed Taxicab Chassis

Offer Made for a Unit of Standard Parts

An offer of $300,000 has been made for the forging department of the Standard Parts Company, it was reported. This does not include the spring department. The offer, which is said to have been made by residents of Chicago who are forming a company, will first have to be accepted by the federal court at Cleveland.

Greater Interest Taken in the Automotive Foreign Trade

To further the efforts of the Department of Commerce in the promotion of better export and import conditions, the National Automobile Chamber of Commerce, the Motor and Accessory Manufacturers' Association and the Rubber Association of America will co-operate with Bureau of Foreign and Domestic Commerce, according to announcement from these bodies.

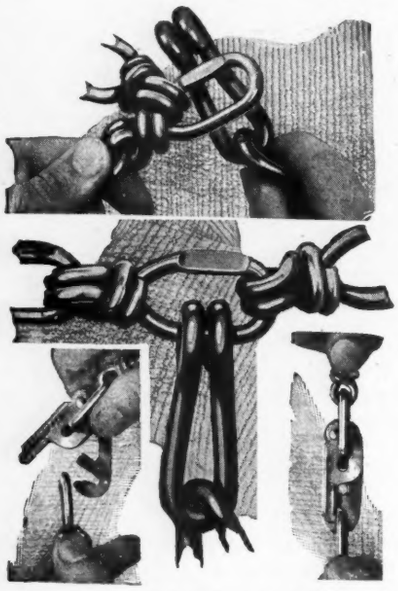
In line with these intentions, the N. A. C. C. is holding its export managers' convention, January 10. The foreign trade committee of the National Chamber now consists of J. Walter Drake, chairman; Peter S. Steenstrup, H. M. Robins, Jay Rathbun, L. J. Ollier, and H. B. Phipps, with G. F. Bauer as secretary of the foreign trade department.

Resolutions creating a foreign trade committee were recently passed by the Motor and Accessory Manufacturers' Association. The Foreign Trade Division of the Rubber Association of America now consists of 55 members and is in a thriving condition.

TRUCK EQUIPMENT AND APPLIANCES

Pyrene Off'N'On Chains

The Pyrene Mfg. Co., 17 E. 49th St., New York City, is the sole selling agent for the Off'N'On Chain Corp., in the distribution of Off'N'On anti-skid chains. These chains consist of two fundamental parts combined into a whole; replaceable cross chains and stronger side chains. The maker points out that the replaceable cross chain feature gives the chain longer life, in that the few cross chains which may wear out in time can be quickly and easily replaced with new cross chains. These chains can be hooked up or detached in a moment's time with the assurance that they will remain as attached.



Views of the Off'N'On Anti-Skid Chain

The cross chains can be attached to any link in the side chain by simply slipping the link ahead around and back on the flat side of the link to which the cross chain is to be attached. Note the accompanying illustration. The opening in the mouth of the double-end hook of the cross chain is just large enough to permit it to slip easily over the flat side of the side chain link. The cross chain hook is then slid easily around end of side chain link, and the side chain link from ahead is permitted to slide back to its normal position, locking the gate on the cross chain.

The cross chain hook when locked securely in place rides on the inside of the side chain link, across from the flat side of the link. It cannot free itself, yet it can be quickly detached by reversing the outline of the procedure given above.

Another big feature, in fact, the latest feature of these chains, is a lock, which when locked retains the chains on the wheel until unlocked by the driver's fingers. This lock is easily manipulated and quickly snapped into place.

Hartford Introduces New Oil-Lubricated Joint

The Hartford Automotive Parts Co., Hartford, Conn., has brought out a new joint, which represents a decided advancement, in that it is adapted to use oil lubrication rather than grease. The natural centrifugal forces are utilized to insure the lubricant reaching the bearings.

Simplicity and strength are incorporated in the design, as it will be noted that all parts are concentric in character and can be accurately made at a minimum cost.

Some of the advantages of this oil-lubricated joint are as follows:

Utilization of natural forces to insure positive lubrication of bearing surfaces.

The convenient relubrication of joint by the removal of any one of four oil plugs located in the ends of bushing retainers.

Prevention of dust or other foreign materials from gaining entrance to any of the working surfaces.

Driving torque stresses are said to be distributed at equal distances from the center to all bearings, and all bearings are of equal size.

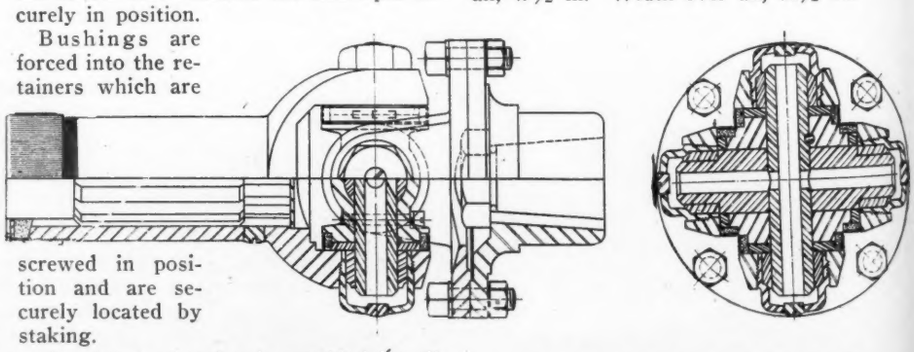
In construction this joint is of the tubular cross pin type with an internal oil reservoir extending the full length of both pins, affording capacity for a liberal supply of oil. Centrifugal force throws the oil to the end of the bushing retaining sleeves from where it is fed by capillary attraction to the bearing surfaces of the bushings and pins.

A packing of rectangular section completely encircles the working surfaces at the inner face of the bushings and excludes all foreign matter and dirt. These packings are held in position by clamp bands and are removable without disassembling joint. Side wear between center blocks and yokes is held down by hardened thrust collars having large bearing areas.

The cross pins are a pressed fit in the center block and cannot work loose, as the small pin keeps the large pin from moving, and a locking screw passing through the center block fastens the small pin securely in position.

Bushings are forced into the retainers which are screwed in position and are securely located by staking.

A separate chamber is provided for oiling the spline shaft, independent of the joint proper, allowing this member to work continually in a bath of oil.



Mechanical Sketch of the Hartford Oil-Lubricated Joint

Ideal Oil Dispenser

The Midway Mechanical Co., St. Paul, Minn., in offering its Ideal Oil Dispenser, states that it effectively combines clean, quick and accurate service. Its capacity, 24 gallons, is divided into one tank of 12 gallons and two tanks of 6 gallons each, enabling it to hold three grades of oil.

The cylindrical tanks of 24-gage galvanized steel admit a 1¼-in. funnel spout for filling. The 1-in. discharge pipe has a non-drip outlet, and the truck of angle steel is mounted on two pressed steel roller-bearing wheels of 10 in. diameter. In the tool box below the tank, where the containers may be kept, there is a cash box with six compartments. When the door is closed a high-grade tumbler lock protects contents and locks tank so that no oil can be drawn. Standard color is red, with black frame, gold and black trimmings and gold lettering. Height over all, 47½ in. Width over all, 30½ in.

Drawing Oil From the Ideal Dispenser

Improvements Announced in Paquito System

The Paquito Ignition Corp., New York City, announces a change and improvements in the breaker box of its Paquito battery ignition system for trucks. The four and six-cylinder models with the standard magneto base will be marketed with a new design of breaker box, featurned by simplicity and sturdiness.

The complete breaker can now be displaced by hand, whereas with the former model, it was essential to displace two screws before removing the breaker cover and breaker. Another improvement is the breaker cover which is of pressed steel and, having a bayonet type of lock, it is a simple matter to remove or replace the cover.

Showing the Paquito Breaker Disassembled, With Breaker at Left and Cover at Right
The cover has a bayonet type of lock and is free from terminals, etc.

The breaker unit is securely retained in its position by a lock ring fitting in a recess or groove in the breaker housing or main part of the body. The new construction decreases the over-all length of the unit as well as weight, and the leads from the condenser, which formerly were were attached to studs on the breaker cover, are now very short and secured to the main body of the unit so that it is possible to displace the condenser without removing the breaker cover as was formerly the case. The breaker mechanism, which differs from conventional in that the contact point on the arm is removable, remains the same.

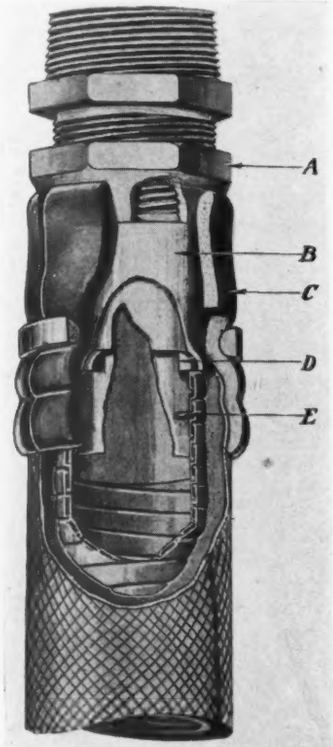
Knorr Detachable Coupling

A coupling that will afford the use of hose as long as the length will permit, is being offered by the Barlow Mfg. Co., 108-114 Park Place, New York City. It is known as the Knorr detachable coupling. Economy is effected through the use of this coupling in that when the entire hose is used up by repeated mendings the coupling is as good as new and can be used on new lengths of hose. This coupling is described as simple, durable and convenient.

In repairing a leak the following procedure takes place: Cut off the hose just below the leak. Loosen spreader nut with wrench which releases the grip of the arms from the hose and allows the worn part of hose to be unscrewed. This cutting off of a few inches of worn hose leaves a length into which the coupling is again inserted. Tighten the spreader. This accomplishes two things: It forces the sleeve of the coupling and gasket against the end of the hose, making a leak proof joint, and it forces the arms to grip the hose, locking the coupling tighter than if coupled by machinery.

The list price is: $2.30 for the ¾ in. size (inside measurement); $3.80 for 1 in.; $6.40 for 1¼ in., and $7.50 for 1½ in. size.

This companay also manufactures specially designed metal hose in the four sizes mentioned above.

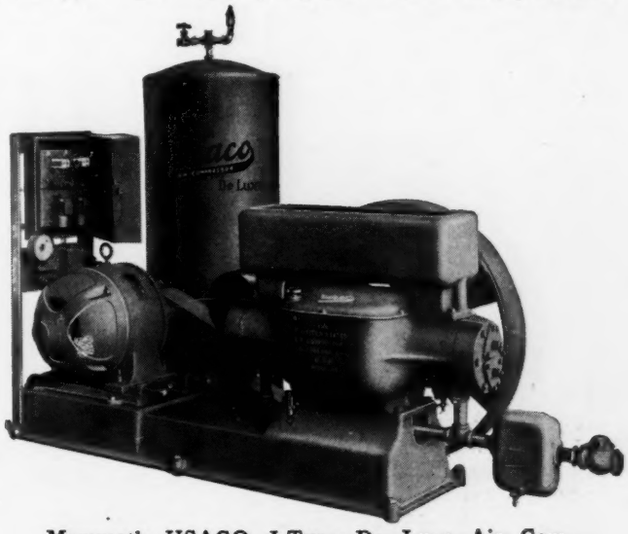


Cutaway of the Knorr Detachable Coupling
A. Spreader nut; B. Sleeve; C. Arms; D. Gasket; E. Thread

New Line of U. S. Heavy-Duty Air Compressors

Announcement is made by The United States Air Compressor Co., 5300 Harvard Ave., Cleveland, O., of an addition to its line consisting of single and two-stage heavy-duty water-cooled air compressors having capacities from 18 to 50 cu. ft. per min., and known as the Mammoth De Luxe units.

This line, claimed to be capable of delivering large volumes of air with minimum attention and repair, is suitable for large garages or machine shops, factories, etc., having many compressed air outlets for tire inflation, cleaning purposes, operating air tools, air hoists, or other pneumatic machinery. Of the two types the two-stage equipment is capable of delivering the greater pressures.



Mammoth USACO J-Type De Luxe Air Compressor Complete
These protected heavy-duty, automatic, water-cooled air compressors are offered in single and two-stage types

The design is compact and sturdy, retaining at the same time accessibility to interior parts. Valves can be removed for inspection by the removal of three screws. Main bearings are split on a 45 deg. angle and provided with adjusting shims. Entire bearing is keyed into position and can be easily removed and replaced. Main bearing caps are also provided with oil reservoirs into which oil is splashed. These reservoirs feed a continuous stream of oil into main bearings.

An overload relay provides protection against overloads. The unit is cooled by a hopper constructed integral with the compressor, requiring infrequent refilling. For heavier, continuous duty, requiring greater cooling, threaded holes are provided for water pipe connections. Cooling is further aided by a fan flywheel.

An automatic controller can be set to start and stop compressor at any desired pressure and an air pressure release, working in conjunction with the automatic controller, permits the equipment to start against no pressure and to pick up its load gradually. This device also discharges any oil, dirt or moisture in the oil trap.

The A. C. motors have a 40 deg. continuous rating, which means that temperature of motor from continuous operation does not rise more than 40 deg. above temperature of surrounding atmosphere.

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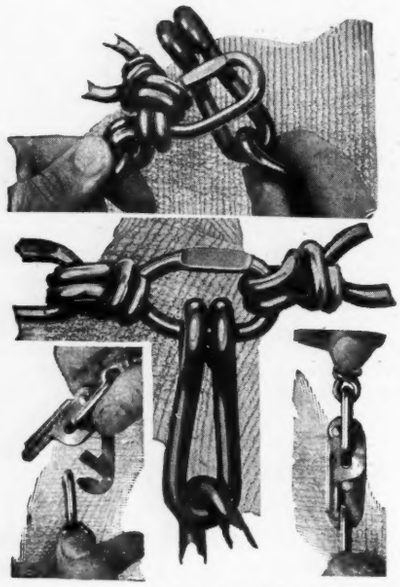

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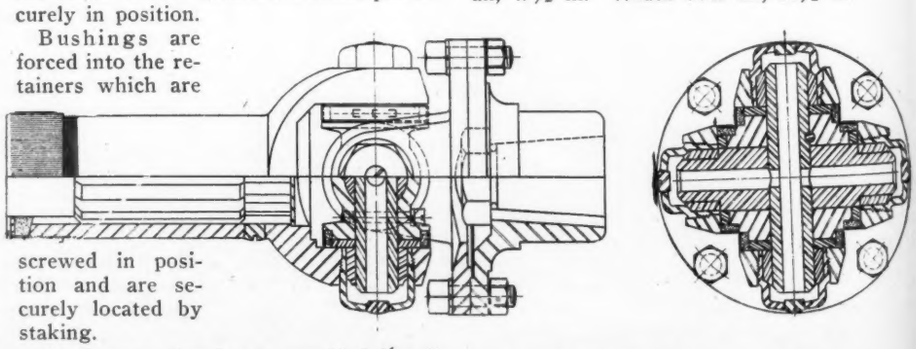

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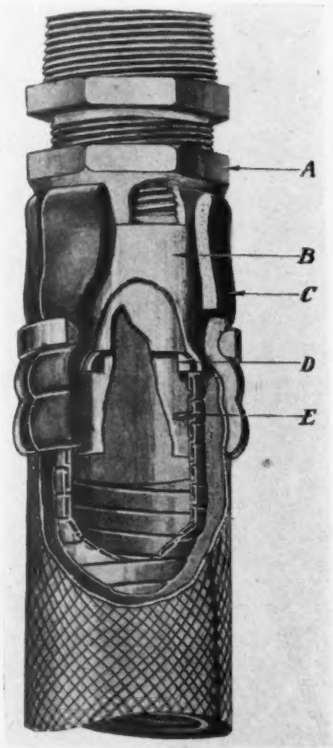

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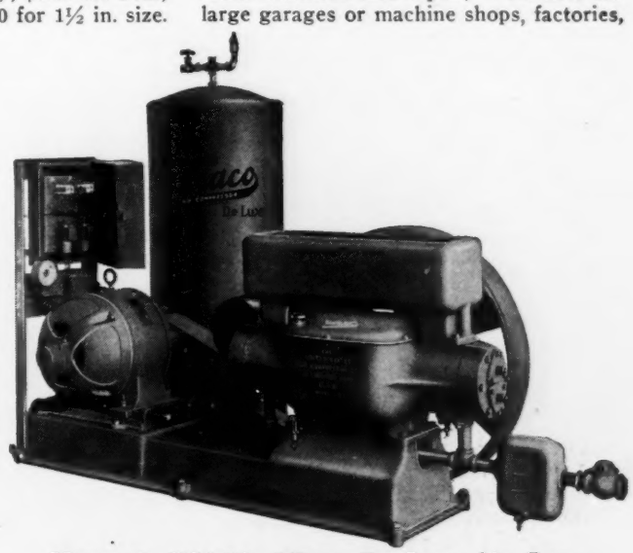


Mammoth USACO J-Type De Luxe Air Compressor Complete
These protected heavy-duty, automatic, water-cooled air compressors are offered in single and two-stage types

A heavy iron base is claimed to insure smooth and quiet operation through the elimination of vibration.

The Mammoth Compressor unit only for line shaft and direct motor drive, is being marketed in both single and two-stage design and is adapted for any compressed air duty within the limits of its capacity.

Victor Pneumatic Truck Tire

The Victor Rubber Co., Springfield, O., is now making deliveries to the trade of a newly-developed pneumatic cord truck tire. Made in the 36 x 6 and the 34 x 5 sizes, this tire is designed to fill the requirements of the light truck and passenger bus field.

There are no departures from the established Victor practice, being rather a modification of the Victor non-skid design. This tire is the result of several months' development and experimental work.

Latest Victor Pneumatic Cord

Gray tubes are added to give dealers a more complete line. Other truck sizes are being developed and will be added later.

Center-Fed Spring Inserts

A new method of spring lubrication is being offered by the Center-Fed Spring Insert Sales Co., Coal Exchange Bldg., Wilkes-Barre, Pa.

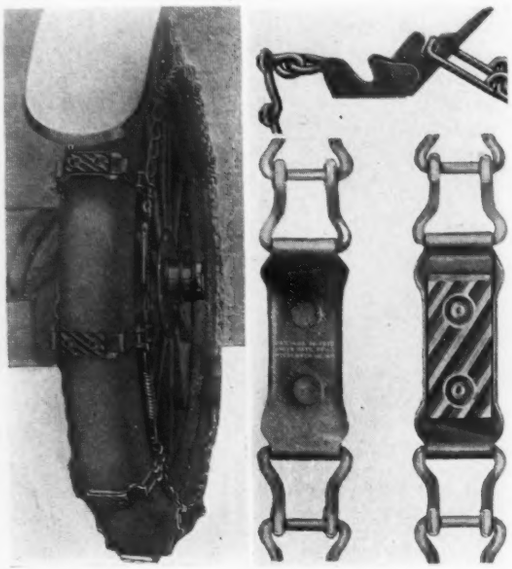
In installing, the spring is removed and an insert, which is a soft metal bearing twenty-five one-thousandths of an inch thick, is placed between each pair of leaves. On springs that have a center bolt the old bolt is replaced with a bolt that has a hole drilled through the center, and a nipple, similar to that used with the Alemite system, is placed on the end of the bolt. A high-pressure oil gun is used to shoot the oil in through the nipple.

The oil follows the slots in the insert and spreads out between all spring leaves. On springs that have no center bolt, a nipple is placed at each end of the spring, the oiling being done in the same manner as previously stated.

Mossgrip Safety Chains for Trucks

The Mossgrip Co., Inc., 232 East 125th St., New Work City, is offering an anti-skid device, known as the Mossgrip, that is claimed to be bumpless. This claim is based on even road contact, large traction service of the chain's grip-blocks, and because two of these sections are always on the ground.

The construction of this chain is stated to be such as to automatically shift around the tire while riding, thus exposing no one part of the tire to constant pressure. A spring arrangement retains the entire device in a trim and firm position without excessive pressure. Extra links also permit the chains to be attached tightly or loosely as the condition of the tire demands.



Showing Mossgrip Attached, Disassembled Units and Lock

The chains are locked to the tire by an ingenious locking device that is said to prevent loosing of the chains by accident and facilitate rapid removal of chains.

The grip-blocks, which are attached to wide and strong frames, are made of tempered steel of a thickness to suit the purposes of the vehicle. The corrugations and the outer edges of the grip blocks prevent skidding and provide effective tractive qualities. These blocks are the only parts that contact with the ground. The frame supporting the grip-blocks is perfectly smooth and fits the contour of the tire snugly.

The lock of this chain is operated by simply engaging the end of the chain with the lock (note illustration), and giving the handle a single turn, it automatically locks with a snap, and at the same time drawing the chain snugly around the tire, and putting the spring into action. It is opened by a quick firm pull, and, it is claimed, never by accident.

Read the Bus Number!

The February Bus Number will contain specially designed bus equipments.

Goodrich Semi-Pneumatic Tire

Announcement is made by the B. F. Goodrich Rubber Co., Akron, O., of a new semi-pneumatic tire, which is described as combining resiliency of the pneumatic with the durability of the solid tire and reducing truck operation costs.

This tire was designed to be pressed on all standard S. A. E. wheels and contains neither flanges nor bolts. The cushion and shock-absorbing qualities of the tire are secured by reason of a hollow air center covered by a steel base.

Skidding is claimed to be reduced by a single grooved tread and maximum traction under various adverse operating conditions provided by specially designed side blocks which skirt the edge of the tread and taper inward on the side walls. A high tread of wear-resisting rubber is stated to insure a full measure of heavy-duty service.

New Goodrich Semi-Pneumatic Tire

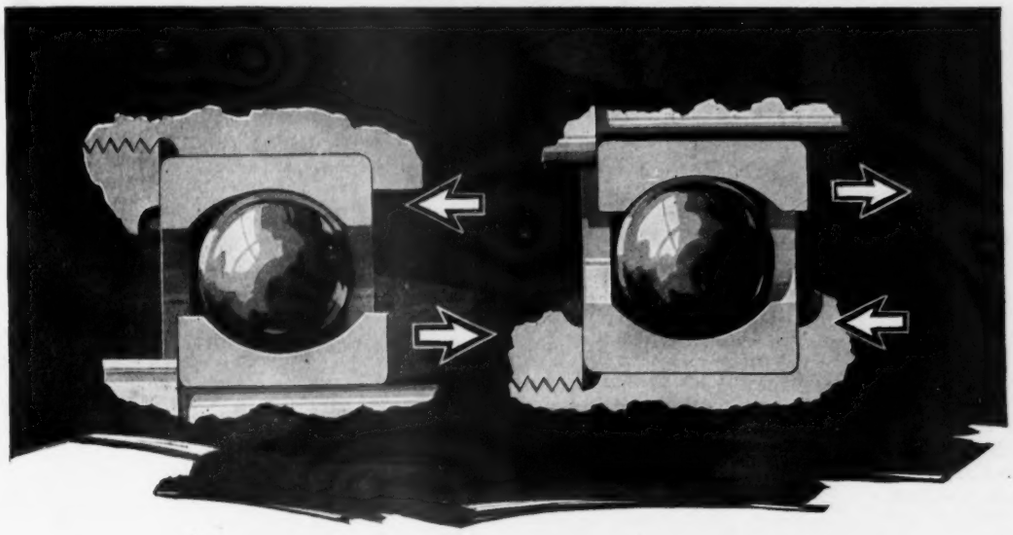
New Type Wickey Battery

Arrangements for manufacturing and distributing on a national scale a new type storage battery are being made by the Wickey Battery Co., East Chicago.

The principal features advanced by the company are that this battery does not require constant attention; is non-freezable, and operates effectively without water from three months to six months.

It is called a semi-dry battery, a semi-solid mixture of electrolyte being used. Strip isolators are used instead of separators. These occupy but little space, being only three in number and made of very narrow hard rubber. These isolators are located one at each end and one in the middle, where they are fixed permanently between each plate. Practically all the space between the battery plates is occupied by the Wickey electrolyte compound. It is stated that this compound does not evaporate and that the evaporation of water which is added at long intervals is hardly noticeable.

SKF



The Deep Groove Radial Bearing as a Heavy Thrust Carrier

WHEREVER radial and thrust loads are carried in combination, the deep groove bearing is the logical as well as the practical choice. The exaggerated view above shows how such combined loads are transmitted.

The thrust capacity of the deep groove bearing is at least as high as its radial capacity and for average speeds may exceed the radial rating of the bearing. Moreover the deep groove bearing is a reversible thrust carrier—it will successfully operate when mounted either way.

The deep groove bearing is especially adaptable to locations where the radial and thrust components are subject to continual variations. All parts of the bearings are designed to withstand these varying conditions. This means adequate bearing service and consequently increased life for your machine.

The deep groove bearing is a product of The Hess-Bright Mfg. Co. and is sponsored by the SKF Industries, Inc. Its manufacture embodies all the minute care, precision and quality for which the mark SKF stands. The world-wide experience of this organization is put at your disposal, free of any obligation on your part.

THE HESS-BRIGHT MANUFACTURING CO.

Supervised by SKF INDUSTRIES, INC., 165 Broadway, New York City

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Here's an Example of

Real Truck Merchandising

This Story of Two Brothers Shows a Surprising Lot of Intelligent Effort and Systematic Procedure That Even Some of the Oldest-Established Houses Lack

Read About Their Methods; It's Edifying

By A. V. COMINGS

IT is refreshing in these days when so many spend their time in saying trucks can't be sold, to find two men who—though they don't say much about it—do sell trucks, frequently, repeatedly and profitably. They've been doing it ever since the war, whence each returned after serving with distinction.

The Hughes brothers, R. D. and D. R. —no one knows which is which—doffed their uniforms after signing the last muster roll, and started the Hughes White Truck Sales Company, at Dayton, Ohio. Previous to the big scrap one had been sales manager of the Federal Sign Co., and the other had been sales engineer for the Stewart-Warner Speedometer Corp. Both are graduate civil engineers. Both knew selling, and the former Stewart-Warner Hughes told me of the former Federal Sign Hughes (I'm lost on their initials, too):

"He is the best salesman I have ever known—and I'm not saying that because he's my brother, either."

Neither had ever sold a truck, so they set about planning their system. They had Dayton and eight good counties in Ohio to work in, and they went to work. WORK, not just dubbing along doing the things that some motor truck dealers like to call work. They went at it intelligently.

Service From the Beginning

Their capital was small, but they knew that with the first truck they sold they would have to supply service. So they invested $2500 in service parts such as would be first needed on all trucks. And since then, as fast as they have added a different model to their "trucks sold," they immediately stock with the necessary service parts to keep that type of truck going.

They have made certain, particularly, to keep in stock everything that is necessary to keep dump trucks running, and contractors' trucks, and farm haulage trucks—all subject to seasonal use and needed on the job every moment during their short season. Just a little foresight on the part of the Hughes boys, but greatly appreciated by their patrons.

Of workmen in their service work they got the very best, and made certain that the service work was done well, and speedily. That helped build business, too, Mr. Hughes told me (the Stewart-Warner one), and is today one of the company's best assets.

And listen to this, for real selling when the deal gets down to the dotted line stage:

"When we get a prospect to the point where he is pretty nearly ready to buy," said Mr. Hughes, "we make up a portfolio of loose leaves bound in a little folder. In this portfolio we enclose a drawing of the truck he means to purchase, fitted with a body such as he plans to use, and with his name or the firm name, printed on the side of it, etc. This drawing we make when the sale begins to look warm, and have it already for him. It always makes a decided hit, for he can see just how his truck is going to look.

Creating Sales Interest

"Also, in this portfolio, are photographs of our trucks in actual service doing the things he plans to do, and these are trucks owned and operated in Dayton or vicinity. And we select trucks owned by prominent people or concerns, showing him that he will be in good company.

"Then there are letters from satisfied users, and other data, all of which convinces him that he is not going to go wrong if he buys a truck from us. It is very convincing selling argument, and we find it very valuable to us."

Consider Type of Prospect

In handling prospects, the two brothers have an absolute rule governing the class of business each calls on. One of the brothers has been very successful with high class merchants, manufacturers, transfer men and the better class of truck buyers. The other seems to do better with the smaller retailer, the teamster type, the dump truck man, etc.

They separate their accounts very carefully, so that the two never call on the same prospect. One man takes the prospect through from the initial sales talk to the completed deal and this method has been found to work out very well indeed. There is no crossing of trails, no duplication of effort and no confusing of the prospect.

One thing that the brothers have stuck to closely during the past few months has been to work only on those prospects that were really in the market for trucks and were real possibilities as candidates for the dotted line. They have felt that during the present lull in business it is useless to work on the type of prospect who has a vague idea of purchasing a truck some time in the dim and dusty future. The result is their actual efforts have brought results, for they have been put forth where there has been a chance to get action.

During 1922 the brothers plan to extend their work to more prospects, however, for they realize that there is opening a wider field for their efforts with the return, even in a slight degree, of more normal business days.

"One thing we have demonstrated beyond argument," said Mr. Hughes, speaking of calling on prospects, "actual sales of trucks bears an absolutely definite relation to the number of prospects seen. Call on a hundred prospects, we make a certain number of sales. Call on twice that number, and the sales go up proportionately. We know, from our own experience, that three or four calls a day is not enough. And during 1922 we are planning eight to ten calls a day, every day. We know we will get greater results."

Are Sticking to List Prices

I asked Mr. Hughes how closely his concern sticks to list prices in selling trucks.

"Our books are open to anyone," he answered. "We have found that it always makes a customer feel he is dealing with a pretty safe concern if he can know that no one is getting a better price than he. So to the buyer of less than five trucks we charge list. To the buyer of five trucks or over, we give the five per cent that his quantity purchase entitles him to. That is our absolute policy in regard to prices, we do not deviate one dollar from that standard."

The Hughes concern gives fairly long terms to its buyers, but is very careful in sizing up the purchaser before a long term sale is agreed upon. As a result of this careful policy, they have repossessed only one truck of all that they have sold, showing that this kind of business can be made

RUGGLES

The New Vision for 1922

1922 JANUARY 1922

"The old order changeth." The dynasty of business judgment has returned. *Again* the world buys on *value*. Dealers face this new year with a vision of trucks made and sold at a figure that matches the price index of other merchandise.

The Ruggles is the world's greatest truck value. The newest and best creation of Frank W. Ruggles, the world's master truck builder. It embodies the very best features of modern truck design, yet sells at a price that gives you a running start in the race for business.

Dealers are reserving territory fast. Your town may still be open. Wire for information.

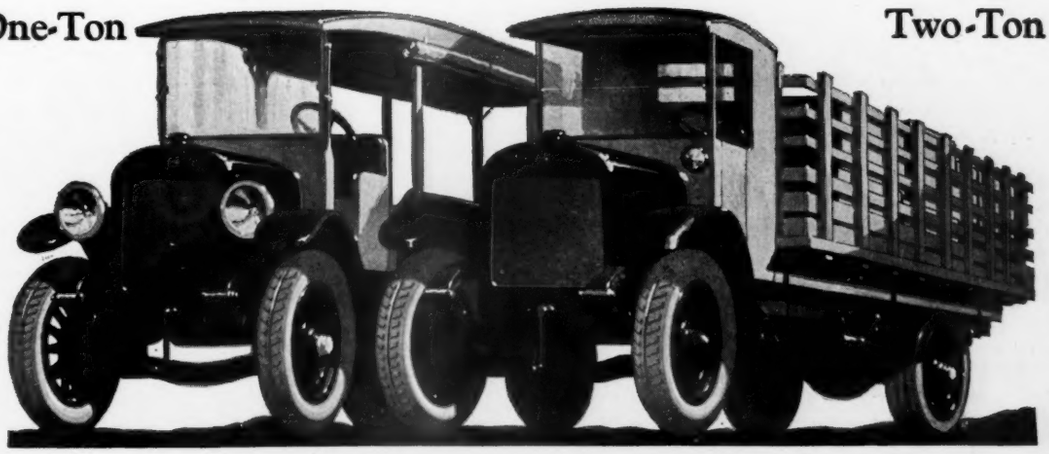
This Emblem Stands for Quality

RUGGLES MOTOR TRUCK COMPANY

Saginaw, Michigan

Canadian Factory: Ruggles Motor Truck Co., Ltd., London, Ont.

One-Ton Two-Ton



The World's Greatest Truck Value

to pay, if handled right. They have not let their eagerness to make a sale override their good judgment.

During their last fiscal year the Hughes company had a quota of 48 trucks, and they sold forty-four. Which, in a year when most truck dealers were afflicted with sea-sickness and blind staggers, is a pretty good testimonial to their selling ability plus the amount of shoe leather they wore out. And they're planning a harder campaign next year.

Used trucks are taken in in trades by the Hughes company, of course, but not at wild figures that do not allow of handling each deal at a profit.

"There is no money in taking in used trucks at a figure that spells loss. We would much rather let our competitors do that sort of thing," says Mr. Hughes. "We try to get as much variety in our used truck trade-ins as possible, so that when a customer comes in looking for a particular kind of used truck, we have something in stock that pretty nearly fits his needs. We have found this a very good method to pursue in taking in trucks in trade, for usually a motor truck dealer, unless he watches this detail, will find himself with several trucks very much of the same capacity on hand, and unless his used truck customer wants that particular type he is out of luck. By keeping a variety on hand, we can suit almost any customer that comes in, and we turn few away."

Claims for defective parts or anything about a truck that the customer thinks is wrong are looked into with the spirit that the owner is right, and is entitled to adjustment. If the owner is found wrong, he is told so, and no adjustment is made, but if right, adjustment is made without a question, no matter what it costs.

"A man never gets sore if you tell him he is wrong and you can't make an adjustment, for he knows he is wrong and so it doesn't make him sore. But when he is right, adjustment must be made or you've got a knocker who will always hurt your business," says Mr. Hughes.

Mr. Hughes is not very strong for the average salesman in the motor truck field.

"We tried using salesmen," he said, "but we found them very unprofitable. We used salesmen for a year, and at the end of that time discovered that nearly every 'sale' they made either my brother or I had to do the closing, actually **make** the sale. They were all right in handling the prospect up to the time when it was necessary to get the name on the dotted line, and then their ammunition ran out. We had to close each deal."

A Different Kind of Demonstration

The Hughes company never demonstrates a truck, in the way demonstrations are usually thought of, at least. If a prospect wants to see a truck in use, the kind of truck he is planning to buy, he is taken where one of this type is working, and usually it is one that has been in service for several years.

"Any new truck will demonstrate well," says Mr. Hughes. "When you can show 'em a four or five year old truck doing the things they will want it to do, it makes a whole lot more impression on them than just riding 'em around in a new machine."

Which is pretty good psychology.

Very Little Overhead

The Hughes company is housed in a modest building on a side street in Dayton. There is no mahogany in sight, nor is there any plate glass. No bright and shiney truck is on exhibition with a diamond sunburst of electric lights playing on its shining brass and polished enamel.

"People don't see a pretty truck in a window and come in and buy one," says Mr. Hughes.

So the overhead is kept down to a minimum. The trucks are where they may be seen—working hard. Good asset.

No throng of bookkeepers, stenographers, stock clerks, office boys, etc., etc., get in your way at the Hughes plant. Overhead eats up profits, and these men are in business for profit.

Yet there is an air of efficiency about the place, and if results are what count, then they are running their business right, for they get results. The kind that show up in the bank balance.

"We are selling 85 per cent of our trucks in small towns, so why spend all the profits in a place here where few of our buyers would even see the truck?" asked Mr. Hughes.

"We have, in the last few months, sold eight trucks to chicken men, who go about the country gathering in the hens. Five to cattle haulers, too, and that type of buyers. The country districts have given us good business."

Here's one last little sales kink that has helped to locate buyers.

Charts are kept of inquiries in various vocations, not a very hard thing to keep, and just as soon as some line shows a decided increase in inquiries, work is concentrated on that line, for the increase indicates that business is picking up in that line and buyers are beginning to stir around.

The Hughes brothers have built their success on hard work, square dealing, and intelligent sales ability—and that will bring success to any truck dealer who will work long enough at the job.

New York Automotive Service Association Meets

At the annual meeting of the Automotive Service Association of New York, held Jan. 5, Henry M. Holt, an active worker, was elected to the office of president. Mr. Holt is a live wire and not only has contributed personally to the programs, but has been very active in procuring new members. Under his direction the association may expect accomplishments in 1922. J. Willard Lord was elected vice-president; Frank J. Lowe, treasurer, and H. J. Lang, secretary. Ralph Rognon, J. Howard Pile, and E. J. Rabidoux were elected to the board of directors. Plans for a series of interesting meetings were made.

On Jan. 13 was held the third annual convention of the service associations in New York, but owing to it being show week it was lightly attended. There was, however, a round table discussion by members of those associations represented and a number of ideas were developed as a result. Harry Cobleigh, service department of the N. A. C. C., discussed the progress of the service movement during the past year and the growth of the service associations. His talk was followed by a general discussion for making the meetings more attractive.

Service Motor Truck to Enter Railway Bus Field

The Service Motor Truck Co., of Wabash, Ind., has formed a Railroad Division, devoted to the production of gasoline-driven railway motor coaches, with Charles Guernsey, former chief engineer, as general manager and chief engineer of the new division. Walter M. Petty, former assistant chief engineer, becomes chief engineer in charge of all matters pertaining to the motor truck end.

Corbitt Reduces

The Corbitt Motor Truck Co., of Henderson, N. C., announces a reduction in prices of all its models. Model AA 5-ton truck has dropped from $5000 to $4500. The firm is introducing three new models.

Desires Far East Agencies

The Shanghai Motor Car Inspection Service, Shanghai, China, is in the market for automobile accessories and desires to open negotiation with manufacturers with a view to securing agencies for various accessory lines in the Far East. Communications should be addressed to Charles A. King, manager, U. S. A., P. O. Box 720, Shanghai.

Truck Bodies at Body Builders' Show

The first exhibition by the Automobile Body Builders' Association, held at the Twelfth Regiment Armory, New York, while not heavily attended, was successful as it not only brought under one roof body manufacturers but makers of that which enters into the construction of bodies. Exhibitors reported that the visitors were keenly interested and results satisfactory.

A number of truck bodies were shown. The H. H. Babcock Company, Watertown, N. Y., had a very comprehensive display of light delivery types. Included among the other exhibits were a bus, dump, etc. The Martin-Parry Corporation, Indianapolis, also has a very attractive line of commercial car bodies. The Reo Motor Company, of New York, displayed its line of speed wagons. The Pantasote Company, of New York, displayed four samples of bodies covered with its product. The exhibits of body hardware, trimmings, upholstery, paints, appointments and varnishes were numerous and among the interesting demonstrations given was that by the American Chemical Paint Company of its rust removal and prevention process.

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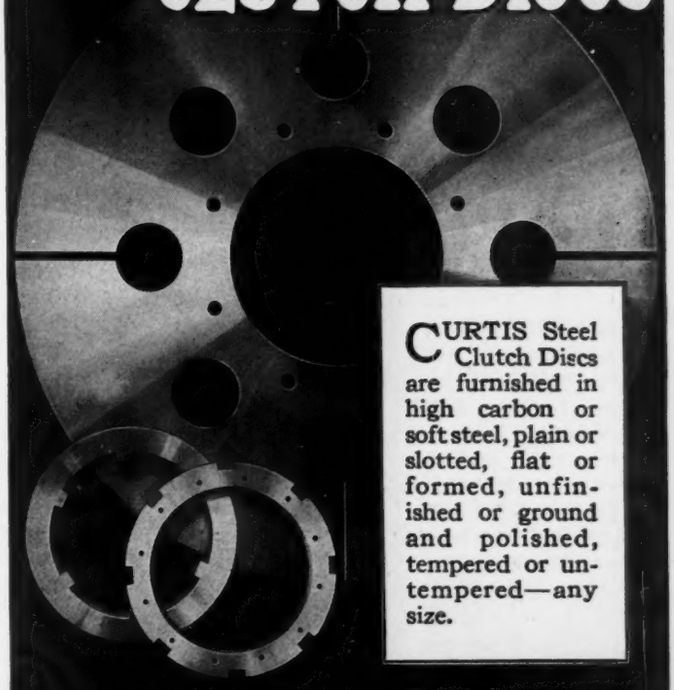
CURTIS CLUTCH DISCS



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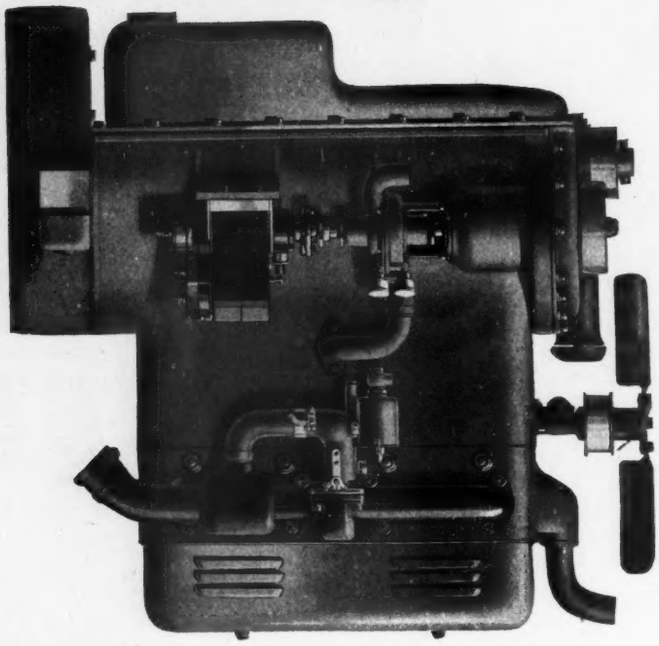

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